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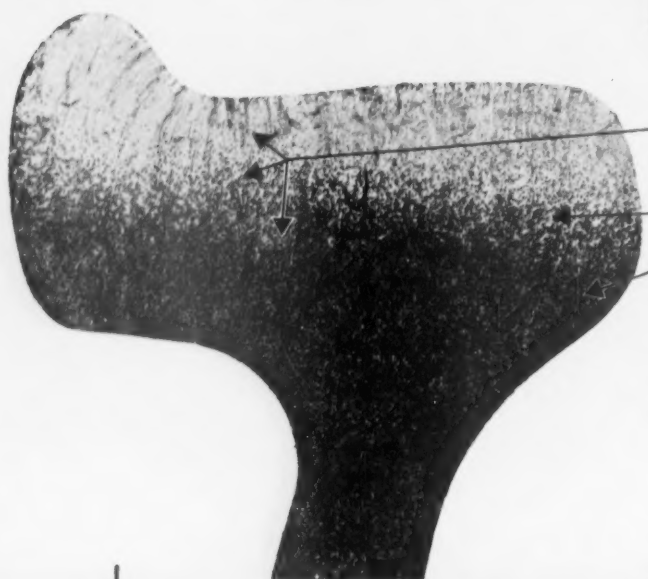
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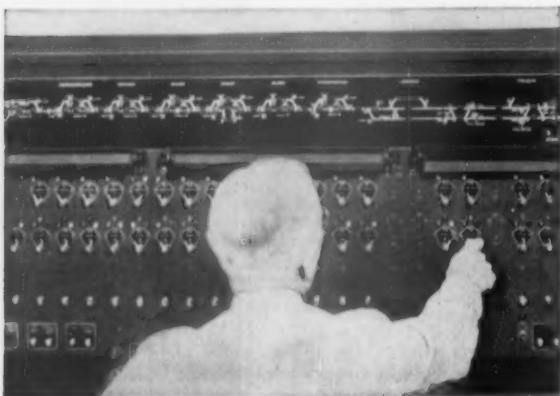




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December 13, 1954

Vol. 137, No. 24

Week at a Glance

A per diem rate of \$2.10—instead of the prevailing
\$2.40—has been recommended by an ICC examiner,
who would have the commission issue a declaratory
order “to terminate the controversy.” 7

The railroads' main “time-lag” trouble has been the
time-lag of their “adaptation to changes in the type and
kind of service shippers need and want,” IC Commis-
sioner Arpaia has suggested. At the same time, he said
railroads “at last” have recognized that “within them-
selves they must generate the driving force that will
keep them abreast of a dynamic and growing economy.” 8

FORUM—T-O-F-C—Adolescent. It is healthy and nat-
ural for an adolescent to “try everything.” In the long
run, if piggyback service is to develop as it should, the
useless space, weight, time and expense-consuming ap-
pendages must be cast off. 49

Piggyback today—How far has T-O-F-C service de-
veloped? What roads are active in this field? What new
products—designed specifically for piggyback service—
have recently appeared on the market? What's the out-
look for the future? Be sure to read:

T-O-F-C—Infancy to Adolescence 50

T-O-F-C In Review 53

Piggyback Equipment Section 68

Machines speed bridge work on the Northern Pacific
—evidenced by the increased production achieved by
an eight-man gang replacing decking on spans near the
Twin Cities. 62

Rolling stock maintenance—Can it be mathematically

IN CEMENTED BALLAST...LARGEST ROCK, and ANYTHING in BETWEEN the **JACKSON** TRACK MAINTAINER DOES A MARVELOUS JOB!



Proved on the toughest jobs the railroads could supply, the JACKSON TRACK MAINTAINER has completely demonstrated that it will handle ALL TAMPING JOBS with outstanding uniformity, speed and economy. Unique action and tremendous vibratory energy give this machine extraordinary speed and efficiency. A divided workhead and quickly interchangeable tamping bars give it such exceptional versatility that it is bound to be kept in profitable operation every day of every working season.

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JACKSON VIBRATORS, INC.

LUDINGTON, MICHIGAN

Current Statistics

Operating revenues, ten months	
1954	\$7,779,882,274
1953	9,016,553,959
Operating expenses, ten months	
1954	\$6,158,779,123
1953	6,780,942,483
Taxes, ten months	
1954	\$ 740,059,728
1953	1,085,573,098
Net railway operating income, ten months	
1954	\$ 671,488,608
1953	952,692,110
Net income, estimated, ten months	
1954	\$ 472,000,000
1953	740,000,000
Average price railroad stocks	
December 7, 1954	81.94
December 8, 1953	59.20
Carloadings, revenue freight	
Forty-eight weeks, 1954	31,344,605
Forty-eight weeks, 1953	35,887,756
Average daily freight car surplus	
December 4, 1954	33,859
December 5, 1953	60,270
Average daily freight car shortage	
December 4, 1954	340
December 5, 1953	217
Freight cars on order	
November 1, 1954	12,853
November 1, 1953	35,171
Freight cars delivered	
October 1954	1,817
October 1953	8,727
Average number of railroad employees	
Mid-October 1954	1,054,602
Mid-October 1953	1,214,550

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Week at a Glance CONTINUED

programmed? Can curves and formulas furnish a more economical scheduling of repairs? **64**

BRIEFS

"Railroads, if given the same quality of financial assistance, can make an invaluable contribution to improved mass transportation and do it without clogging up the highways . . . some serious planning on behalf of the long-neglected railroads is plainly called for, so long as it is understood that any practical rehabilitation will require the same sort of benefits that the highways have been enjoying. In short, the railroads need subsidy, too."—*From a New York Herald Tribune editorial, December 9, commenting favorably on a proposed study of traffic and transportation problems in the New York metropolitan area.*

Preservation of each agency's inherent advantages does not mean to IC Commissioner Owen Clarke that "rail rates must be held at a competitively high level for protection of other modes of transportation." Mr. Clarke rejected that interpretation of the National Transportation Policy in dissenting from a commission decision which condemned a rail rate proposed to meet competition of a truck-water-truck rate.

Ladies' Day on the C&O! Every Thursday during the pre-holiday season ladies traveling on C&O trains between Richmond, Va., and Newport News, Phoebus and Hampton, need pay only the one-way fare and they'll get a free ride home. The special one-day tickets must be purchased from station ticket agents and are not sold on trains.

To improve performance of air conditioning and lighting equipment, the Pullman Company is converting three retired cars into a three-car unit for instruction purposes. It is planned to move them, together, to various maintenance yards around the country for instructing Pullman supervisors and maintenance people. Instruction will also be available to railroad personnel.

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Manually, Mechanically, or Electrically Operated



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Mahon Release Device and Governor on the Automatic Closing Mechanism of a Mahon Rolling Steel Fire Door. Fusible links release the mechanism in case of fire and the door closes automatically.

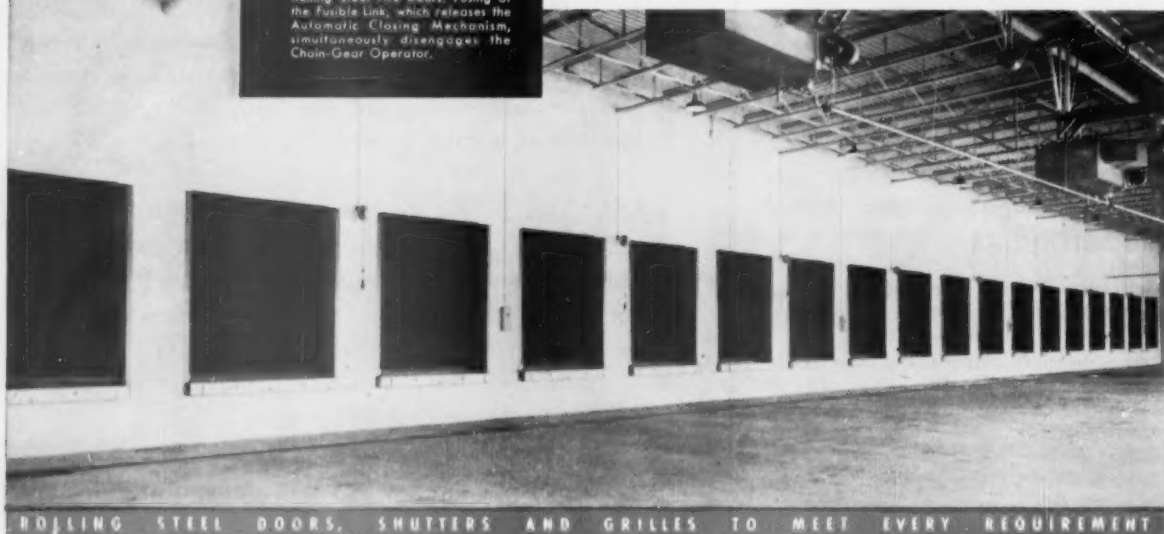


Mahon Release Device for Chain-Gear Operator furnished with Mahon Mechanically Operated Rolling Steel Fire Doors. Fusing of the Fusible Link, which releases the Automatic Closing Mechanism, simultaneously disengages the Chain-Gear Operator.

No other type of door offers the space saving advantages of a good rolling steel door. This is true even in a dividing fire wall such as the installation shown below. In this particular fire wall, between an enclosed loading area and a large food warehouse, eighteen Mahon Underwriters' Labeled Automatic Rolling Steel Fire Doors are installed in truck loading openings at close interval. In general daily service, the vertical roll-up action of these doors occupies no usable space on either side of the openings . . . merchandise can be stacked within a few inches of the door curtain. If a flash fire should occur while the doors are open—either in the warehouse or the truck loading area—the automatic closing mechanism will be released and the doors will close automatically shutting off draft and preventing spread of the fire through door openings. Mahon Underwriters' Labeled Automatic Fire Doors are available for all Underwriters' opening classifications . . . these Labeled doors can be furnished with either chain-gear or crank-gear operators. Mahon Automatic Fire Doors can also be built in strict accordance with the Underwriters' Specifications and furnished with Electric Power Operators for openings where the combined features of power operation in general service and automatic closing in case of fire are required. See Sweet's Files for the complete line of Mahon Standard and Underwriters' Labeled Rolling Steel Doors. Check Mahon Specifications carefully . . . you will find extra-value features in design of operators and other mechanical devices as well as in bearings and other materials used. If Sweet's is not available to you, write for Catalog No. G-55.

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Eighteen Mahon Underwriters' Labeled Rolling Steel Fire Doors installed in a new Big Bear Warehouse, Detroit, Michigan. In addition to the fire doors, Two Mahon Power Operated Rolling Steel Doors and Three Mechanically Operated Rolling Steel Doors were installed in other openings of this modern building. T. Rogvay, Architect, Barton-Malow Co., Gen. Contrs.

MAHON

Cut in Per Diem Rate Proposed

Examiner recommends ICC finding that reduction from \$2.40 to \$2.10 would make car-rental charge reasonable

The Interstate Commerce Commission has been advised by Examiner Howard Hosmer to pave the way for ending the railroads' per diem dispute by issuing a declaratory order stipulating that the car-rental charge would be on a reasonable basis if it were cut from \$2.40 per day to \$2.10. The examiner would also have the commission "find and declare" that per diem charges of \$1.75 and \$2 were reasonable during the periods in which they were effective.

The case out of which the proposed

report came is the proceeding (No. 31358) instituted last year after a group of railroads had filed a complaint against roads refusing to pay the \$2.40 charge. The complainants are 19 of the larger class I railroads, and 14 other class I roads intervened to support them. The complaint asked the commission to find that the \$2.40 rate is "just, reasonable and otherwise lawful."

Defendants and their supporters include the New York, Susquehanna & Western; Boston & Maine; New Ha-

ven; Rutland; Long Island; and a large group of short lines. In refusing to pay the \$2.40 rate, some of the defendants offered to pay on the basis of a graduated scale depending upon the age of the car.

The commission order recommended by Mr. Hosmer would not fix the per diem rate. It would be a declaratory order which section 5(d) of the Administrative Procedure Act permits the commission to issue "to terminate a controversy or remove uncertainty." Such action appeared to be favored by a majority of the parties, except the short lines, Mr. Hosmer said.

There's Controversy—"Manifestly," he added, "there is a controversy here and uncertainty as to the measure of just compensation due complainants from the defendants for the use of cars owned by the former."

Meanwhile, the complainants disclaimed any intention of seeking to have the commission fix a per diem rate pursuant to its power under the Interstate Commerce Act's section 1(14)(a). "Such action," Examiner Hosmer said, "would involve the entry of an order, which presumably would continue in effect for the indefinite future and, unless it were vacated or modified, would render the present procedure for dealing with per diem charges inoperative." The "present procedure" is that embodied in the Section 5a (Bulwinkle-Act) agreement covering per diem.

Cost Accounting—Coming to his consideration of figures in the record, Mr. Hosmer referred to the "general agreement that car rentals . . . should be reasonably compensatory and no more." Thus, the determination of a per diem rate "is essentially a problem in cost accounting," the examiner added.

He went on to appraise and modify the cost data and formulae in the record, coming up with the accompanying table of estimated average costs of car ownership.

Examiner Hosmer found bases in the table for the per diem figures used in the declaratory order he recommended. Leading up to that recommendation, he had this to say:

"The Susquehanna refused to pay the charge of \$1.75 after April 1, 1951, and it is therefore unnecessary to consider whether the charge was unreasonable before that date. The table shows a cost of \$1.8583 as of April 1, 1951, and therefore indicates that the charge of \$1.75 from that date to April 30, 1952, was not unreasonable. Similarly, the table indicates that the average cost in 1952 and 1953 was at least \$2.0398, which was slightly

RRs NEED NEW DEAL FROM GOVERNMENT, "AVIATION WEEK" CONCEDES

"We concede, however, that some reforms should be offered the railroads by government," writes the business magazine "Aviation Week."

Aviation Week's comment was the end result of an exchange of editorial views with *Railway Age*. The start was an editorial in the aviation paper which contended, in effect, that railroads ought not to complain when the Post Office gives mail to air lines; that the railroads shouted "progress" while they relieved the slower canals of traffic; and that they should not now stand in the way of a faster mail service.

Next step in the exchange was an editorial in *Railway Age* (November 1) suggesting that Aviation Week had missed the point of the railroad argument. It said:

"The railroads do not contend that they have an inherent right to carry the mail. They do insist, however, on the importance of the fact that, while they have been relieved of considerable quantities of the most desirable kind of mail traffic between points of large concentration, they have not been relieved of any of their old obligations to maintain the facilities to carry mail, in any quantity offered, anywhere they run passenger trains, and to give this fluctuating traffic first priority at all times."

A copy was sent to the air magazine with a letter admitting that the railroads' argument might be considered "too complicated" but contending that the railroads "have been given a complicated status" and that

"they will continue to suffer until they are removed from that status and can appeal to the public simply and affirmatively, as your own readers are fortunate enough to be able to do."

Aviation Week responded by reprinting *Railway Age's* editorial in full, in its issue of November 15, and making the following editorial comment concerning it:

"Our answer to *Railway Age's* editorial is that we believe there are actions the railroads themselves can take to improve their economic status. One such action may be along the lines suggested the other day by the new president of the New York Central. He believes the NYC can no longer afford the maintenance and tax luxury of a four-track right-of-way on its main line for hundreds of miles. He told newsmen he can foresee a three-track line next instead, and eventually a two-track right-of-way efficiently handling all main line traffic. This, we contend, is revolutionary talking in railroads."

"We concede, however, that some reforms should be offered the railroads by governments. Quoting an editorial on this page last week: 'If the railroads cannot accommodate themselves to long-term economic trends and if government policies are deemed responsible to some extent, then the government should change those policies accordingly.' This is the Air Transport Association position. Both ATA and Aviation Week consider the railroads of vital national importance."

ESTIMATED AVERAGE COSTS PER ACTIVE CAR DAY

	1948 Cents	1950 Cents	1952 Cents
Cost of freight-car repairs	1.17	74.05	88.42
Deadhead haulage of freight-car repair material ..	2.03	2.13	2.54
Charges to depreciation of freight cars	24.28	26.86	28.84
Charges account of maintenance and depreciation of shops	6.03	5.46	6.18
Miscellaneous maintenance of equipment accounts ..	4.69	5.48	6.67
Allocated proportion of general expense	3.20	3.58	4.48
Interest on freight-car value	39.46	41.19	50.03
Interest on value of repair shops	2.24	2.29	2.30
Interest on investment in stock of freight-car repair material	0.50	0.53	0.63
Interest on working capital	0.47	0.50	0.60
Cost of certain taxes	10.89	11.68	13.29
Totals	163.80	173.76	203.98
Additional labor, material and payroll taxes to reflect increased cost levels as of May 1, 1949, and wages as of January 1, 1947	4.96	12.07	1.81
Same as of April 1, 1951			
Same as of April 1, 1953			
	168.76	185.83	205.79

Car Ownership adjusted to car utilization ratio of 90%:	
1948	583,286,368 car days
1950	578,535,476 car days
1952	585,970,978 car days

higher than the charge of \$2 in effect during the greater part of those years. "The present charge of \$2.40 is considerably higher than the cost of ap-

proximately \$2.06 shown in the table, and it is therefore concluded that a reasonable charge under present conditions would be \$2.10."

Law & Regulation

RRs "On Way—Not Out, but Up"

Must "generate within themselves driving expansive force to keep them abreast of dynamic and growing economy," IC Commissioner Arpaia tells New York security analysts

"Railroads are not on their way out; they are on their way up," Interstate Commerce Commissioner Anthony F. Arpaia told the New York Society of Security Analysts in a December 3 luncheon address. He warned, however, that railroads—and public transportation generally—"cannot adhere rigidly to past patterns"; they must, within

themselves, "generate the driving expansive force that will keep them abreast of the demands of a dynamic and growing economy."

Progress from "The Defensive"—"As an older form of transport," railroads, Mr. Arpaia said, "have been on the defensive. Their outlook has been ingrown and rigid and it has

been more difficult for them to shake off old patterns than it has been for industry generally.

"They have made progress; they are trying to do more. Some delay in taking advantage of technological advances and improvements or in making changes is understandable. . . . If all the railroads of this country could be as modern as the most modern parts of the best of them, railroad costs and service would undoubtedly be much more attractive than they now are.

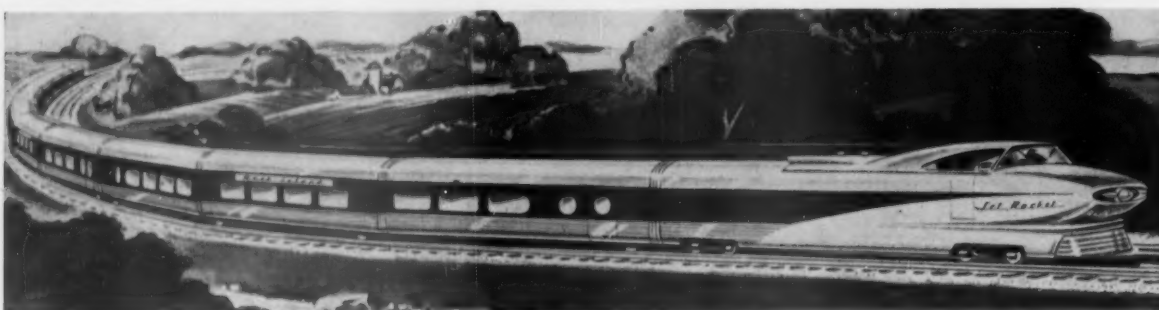
"Bludgeon of Competition"—"After years of complacency it was the bludgeon of competition which made many railroads realize that they could not continue to do business at the same old stand and in the same old way. It has been competition which

"Isn't the passenger-deficit problem largely a question of education? Why can't communities be told: 'The minimum cost of providing a specified amount of passenger service is "x" dollars. If you want that much service, then pay us "x" dollars to furnish it'?"

has forced them to vary, improve and innovate. . . . That the 'shackles' they and other carriers have complained about in the past have been self-imposed to a large extent, is proved by developments during the past 10 years.

"Readjustment of the country's traffic pattern to give place to greatly increased motor and air transportation partly explains what has happened to railroad traffic—but only partly. The main trouble has been the 'time-lag' of the railroads' adaptation to changes in the type and kind of service shippers need and want.

"Up to Management"—"Improvement of public transportation is up to management individually and collectively. There are some outstanding examples of progressive leadership which have come to the fore in the last 20 years. But they have been hamstrung by the laggards. The country is



ARTIST'S CONCEPTION of the Rock Island's new "Jet Rocket," on which ACF Industries, Inc., is to begin production shortly (*Railway Age*, December 6, page 8). The unusual looking locomotive will develop 1,200 horsepower, yet its roof line will be only 10 ft 9 in. above the

rails. It also will contain auxiliary power for light, heat and air conditioning for the train of four, three-unit articulated cars. The rounded roof and contour of the locomotive will match that of the cars. The train will have an overall length of about 500 feet.

growing in production as well as population. Industry and population have become decentralized. Methods of supply and distribution have changed. Public transportation cannot adhere rigidly to past patterns in the light of such changed conditions."

Earlier in his talk, Commissioner Arpaia had told the analysts that the ICC "regulates transportation to assure sufficient and stable public transportation, but does not 'manage' the carriers." Rate-making, he said, "is still a matter of managerial discretion," but "some judgment and restraint by an impartial arbiter" is necessary "to prevent disruptive and ruinously competitive rates." To emphasize his contention that the commissioner does not "usurp" managerial

"Public transportation must eliminate waste, duplication and unnecessary services, to hold its costs down to a point where its rates can be kept below the ceiling which is imposed by the actual cost of private transportation, i.e., below what it costs a man to perform the same service for himself."

rate-making authority, he pointed out that, of 25,000 tariffs filed in the first six months of 1954, only 1,199 were protested, only 68% of those were suspended, and only 15 were suspended by the commission on its own initiative.

"We Need Wonder Drugs, Not Pills"

"Time lag," fourth section relief, just "aspirin," says Warren Brown—He suggests a multi-unit commission to formulate an entirely new transport policy under a single agency

Elimination of the "time lag," repeal of the long-and-short haul clause, and relief from "provincial" decisions of local regulatory bodies are "a prescription as ridiculous as the presentment of an aspirin a day to a man who is dying of pneumonia. What the railroad industry needs is a few hundred thousand units of penicillin—a wonder drug—and in a hurry," Warren W. Brown, president of the Monon, said in Indianapolis on December 1.

The railroad industry might need such a drug "a whole lot faster than many of us think if this craze for new roads, increasing material and supply prices, and anticipated labor requests for 1955 keep jamming us up against the roof of stony regulation and the parapet of unimaginative pricing," he told those attending the first annual Hoosier Traffic & Transportation Seminar at Butler University.

It is logical to question, he said, why, in the face of so serious a situation, the railroad industry does so much talking. "The answer is reasonably obvious. The patient is sick, the illness is something singularly peculiar, and there is only speculation on the cure. The emergence into free enterprise of a completely regulated and subsidy-battered industry is a gigantic undertaking which will try many minds before it is accomplished. Thus, the conversation is necessary to talk ourselves into concocting this wonder drug, to talk the industrial traffic world into letting us have it, and to talk ourselves into taking it."

Prescription — Offering his own "prescription" for a "wonder drug" for the railroad industry, Mr. Brown said: "Create a railroad interstate commerce commission composed of industrial traffic experts, railroad labor

representatives, practitioners before the Interstate Commerce Commission, and railroad men. Their purpose would be to review all federal transportation legislation as it pertains to the railroad industry . . . sentence by sentence, paragraph by paragraph. Object: To

revise or junk legislation, section by section."

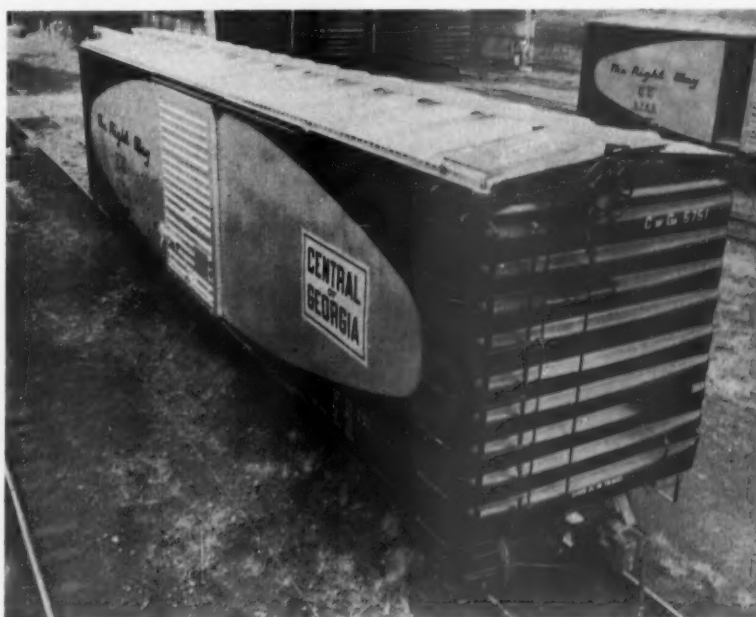
A similar commission should be created for motor carriers and for all other basic modes of transportation. "Out of these deliberations should come a recommendation for a new transportation policy, a recommendation as to how it should be instituted, and a recommendation as to the makeup of the single transportation agency that should administer it," he stated.

Amusing but Tragic—Mr. Brown spoke on behalf of the railroad industry in a seminar forum on "Competition, What We're Doing About It," in which representatives of other transportation media also took part.

Mr. Brown described the competitive picture, present and future, for railroads against each other individual transport form. He then took "a quick look at two things which aren't active competition in a literal sense, but which actually constitute the greatest competition the railroad industry has ever faced."

They emanate, he said, from governmental operation at all levels "but particularly state and federal. Each political division is composed of subdivisions which seem to be working at cross purposes with one another." At the federal level, he continued, the ICC deliberates over suspension of a tariff, while Congress appropriates \$101 billion for new highways, or freightways, which are to be installed without provision for user charges.

"Although the situation is tragic,



GLEAMING ALUMINUM PAINT dresses up this Central of Georgia box car, one of 500 similarly painted units being delivered to the road by the Pullman-Standard Car Manufacturing Company. The large oval design, painted with Aluminum Company of

America aluminum paint, is surrounded with black. Stenciled in black against the aluminum background is the CofG's slogan, "The Right Way." The road's monogram, also appearing on the aluminum surface, consists of black lettering on yellow.

it also seems somewhat amusing when you find that brilliant public servants in the Congress, state legislatures and local municipal councils, administer to the demands of progress, while their equally brilliant counterparts in the regulatory forces administer to the memory of a nation."

The seminar was sponsored by the Indianapolis Traffic Club in cooperation with the Indiana State Chamber of Commerce, Indiana University, the American Society of Traffic & Transportation, Butler University, Delta Nu Alpha Fraternity's Beta Upsilon chapter and the Indianapolis Chamber of Commerce.

Supreme Court Approves ICC Intrastate Order

The United States Supreme Court, by upholding a Louisiana district court, has approved the Interstate Commerce Commission's action in requiring the Louisiana Public Service Commission to bring intrastate rates up to interstate levels.

The action of the district court was appealed by the PSC following dismissal of the state body's complaint July 12. The PSC sought to set aside an ICC order of April 4 which directed railroads serving Louisiana to increase their intrastate rates to match interstate charges on like commodities. The PSC had, through 1948 to 1951, raised some intrastate rates but exempted other commodities.

"Federal Transport Policies Out of Date"—Murray

Federal transportation policies affecting railroads are out of date, work a hardship on the industry, and should be thoroughly re-examined. Undersecretary of Commerce Robert B. Murray, Jr., said in a message to 1,800 top officers of railroads and railroad supply companies at the annual dinner of the New York Railroad Club on December 9.

"The railroad industry," Mr. Murray declared, "has every right to expect the government to assure it an opportunity to compete on fair terms with other forms of transportation." Appointment of the President's Cabinet Committee on Transportation Policy and Organization, he added, demonstrates the Eisenhower Administration's deep appreciation of problems affecting the nation's transportation industries.

Out-of-date transportation policies, Mr. Murray also said, stem from the period when railroads had virtually a monopoly position, although that position has changed completely. "Transportation is now highly competitive and railroads, still operating under earlier regulatory concepts, are not always in position to enter fully into the present competitive race. Regulatory limitations, in the face of a severe competitive situation, limit the carriers'

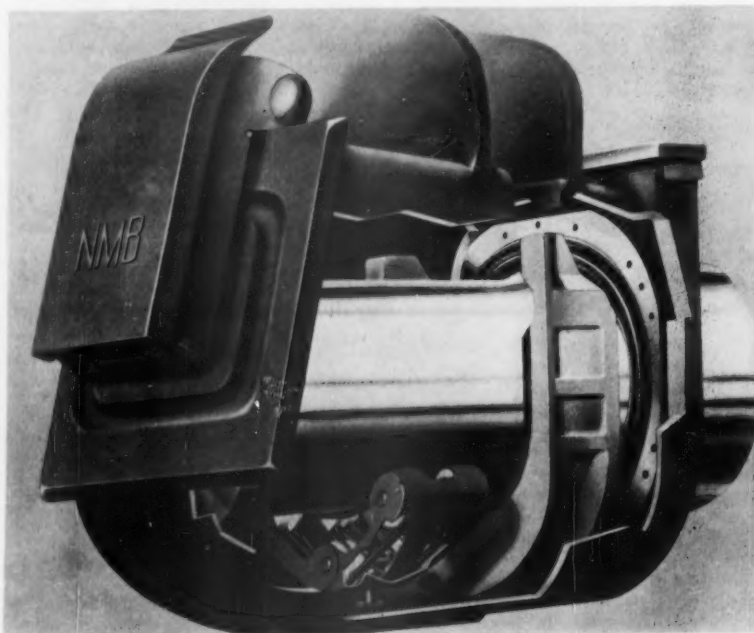
ability to attract the available traffic."

The undersecretary's message also took up the heavy deficits in railroad passenger service. "A possible solution to this problem," he suggested, "would be to confer on the Interstate Commerce Commission the power, on review from adverse orders of state authorities, to curtail unprofitable and

unsupported intrastate railroad passenger services when ample alternate facilities exist."

Stating that railroads have spent billions for improvements since the war, he added that "there is further room for improvement. To a large degree, this depends on an improvement in the financial position of the carriers."

Equipment & Supplies



NMB sealed journal box kit.

New Lubricating System Authorized for 10,000 Cars

A new system of lubricating freight-car journals, which is said to reduce oil consumption by 90%, extend bearing and axle life, and eliminate causes of more than 80% of all hot boxes, has been given official approval by the Association of American Railroads for installation on an initial 10,000 cars in interchange service. This announcement was made November 30, at a press luncheon and demonstration in Redwood City, Cal., by Lloyd A. Johnson, president of National Motor Bearing Company, which conducted necessary research and development work at the suggestion of the Union Pacific (*Railway Age*, December 6, page 3).

The new system involves devices which seal journal boxes at both ends to prevent loss of oil and also to keep out dirt and water. Another device, activated by the journal, or axle, whenever the car is in motion, assures a continuous flow of oil to all parts within the journal box assembly. The remaining components are guard bear-

ings which prevent the journal from being damaged through contact with the journal box during sudden braking or violent coupling of cars. Installation does not require any alteration or machining of the journal box.

The lubricant conveyor is a spring-supported rubber-belt and nylon-roller-type device, always in contact with the lower part of the journal; the guard bearings are rubber-lined ductile iron castings in two parts; the journal-box lid presses a rubber gasket firmly against the front of the box; the rear oil seal is a composite steel-rubber ring of unique design which fits tightly in the dust guard well and around the seat on the axle; the dust-guard-well cover is placed over a plastic mesh filter and held down by two spring clips.

First exploratory tests of the experimental equipment took place in UP yards at Los Angeles about two years ago. When necessary improvements then indicated had been made, the devices were installed on 10 UP cars operating at high speeds between Los Angeles and Las Vegas, Nev., during severe summer heat and dust

TP&W WILL FIGHT SALE OF ILLINOIS TERMINAL

The Toledo, Peoria & Western, unsuccessful bidder for properties of the 355-mile Illinois Terminal (*Railway Age*, August 23, page 8, and November 29, page 12), has announced it will "vigorously oppose" the application to purchase the road filed with the Interstate Commerce Commission by a nine-railroad group.

The TP&W plans to file an exception to the application because of the anticipated effect the proposed change of IT ownership will have on the TP&W's connection with it at East Peoria, Ill. The TP&W points out that present management of the IT, at a passenger service discontinuance hearing at Springfield, Ill. (*Railway Age*, October 25, page 8), stated that present passenger service deficits might force the company to abandon all its lines north of Edwardsville. Such a move would eliminate the present TP&W connection. A TP&W spokesman says the purchase application states that no reduction of mileage or operation is contemplated by the would-be owners so long as "consistent with good railroad management," but that such a move is also termed consistent with good management practices in the application.

conditions. The cars were transferred to the mountain route between Portland, Ore., and Pocatello, Idaho, for winter testing and the devices finally tested at the AAR Research Center, Chicago, with favorable results and authorized application to 10,000 cars. Additional service test installations have also been made to "on line" cars of the Western Pacific and Southern Pacific.

According to Mr. Johnson, the new equipment will cost railroads under \$200 per car and cost of replacement parts will be relatively low. Some of the devices are expected to last the lifetime of a car. The oil seals show promise of being good for 175,000 miles, or about 10 years, of service. Cost of the original equipment is expected to be amortized through savings within 18 months.

ROLLING STOCK

The Chicago Transit Authority will order next year an additional 80 rapid transit cars to be converted from present "PCC"-type street cars at a cost of approximately \$3.2 million. Previous conversion of several hundred such cars has been undertaken by the St. Louis Car Company (*Railway Age*, November 22, page 32).

The Illinois Central has ordered 70 1,750-hp diesel road-switching units

from the Electro-Motive Division of General Motors Corporation at a cost of \$11,707,780. Delivery of the entire order is scheduled for next year.

The Southern Pacific has ordered 163 diesel units at an approximate

cost of \$30,000,000. The new units, comprising 260,510 horsepower, will be built by the Electro-Motive Division of General Motors Corporation, the American Locomotive Company, and the General Electric Company. Deliveries are scheduled to begin this month.

Rates & Fares

"No Pot of Gold" for War Claims

Shippers say they would have to pay for reparations awards—17-part "overcharge" case in commissioners' hands

The nation's shippers would have to "pick up the check" if reparations claimed by the government on alleged wartime overcharges by the railroads were granted, the Interstate Commerce Commission was told by shippers' spokesmen during oral argument of the case.

In separate appearances before the commission as interveners, John S. Burchmore, general counsel for the National Industrial Traffic League, and Walter R. Scott, representing the Transportation Association of America and several shippers, stressed their contention that whatever might be taken from the railroads would have to be made up by their clients in the way of increased rates on commercial shipments.

NIT League—Mr. Burchmore emphasized that the NIT League's appearance represented far more than "casual interest" in the case and recalled an earlier presentation in which he had contrasted "the results" of the transportation services provided in World Wars I and II. He stated that the government's case, as presented by the Department of Justice (*Railway Age*, December 6, page 7) failed "to meet the test" normally required of commercial complainants in reparations cases.

He asked the commission not to base its decision—because of the effect it could have in many fields—on "narrow rules" but to consider the broader issues involved.

"Effrontery" — Mr. Scott wondered at the "effrontery" of anyone accusing the roads of overcharges during the war period and declared that the government actually benefited from "amazingly low" rates. It is "such an outrageous thing," he declared, "that I can't imagine it is possible" for the government to have a legitimate claim.

He also asked a question raised earlier by Chairman Mitchell as to where railroads would now get the money if reparations were awarded. The wartime income has gone "out of their tills," he said, to reduce debt and finance new equipment. That would leave it for the shippers, he maintained, "to pick up the check."

(Mr. Mitchell also had asked a gov-

ernment attorney where railroads would get the money to pay the charges. "There's no pot of gold," he said.)

Martin A. Meyer, Jr., of the Railroad Security Owners Association, told the ICC the government effort actually "is in violation of the National Transportation Policy." Wayland K. Sullivan, of the Brotherhood of Railroad Trainmen, also representing the Locomotive Engineers, said the brotherhoods "unhesitatingly endorse and adopt" the railroads' defense and warned that "private ownership of railroads would perish" if the reparations were awarded.

The interveners' presentations followed the government and railroad arguments at a four-day session before the full commission. At the conclusion of all argument the case was taken by the commission for a final decision. A proposed report by Examiners Hosmer and Boat has recommended that all 17 government complaints in the consolidated case be dismissed. The amount involved had often been put at \$2 billion until the argument, when a government attorney, at the insistence of ICC Chairman Mitchell, submitted a "guesstimate" putting it at \$475 million.

Competitive Transport

"Pick and Choose" Practice Lost RI Case for Truckers

It was the failure of independent truck lines to provide complete service, particularly "needle operations," which prompted the Interstate Commerce Commission to ease restrictions on trucking services of the Rock Island Motor Transit Company, subsidiary of the Chicago, Rock Island & Pacific.

The commission's decision, noted briefly in *Railway Age* December 6, page 5, will permit RI trucks to conduct "all-motor" service on several routes, including a Chicago-Omaha operation. The commission said the ruling was not to be construed as an



"HOME FOR THE HOLIDAYS," with emphasis on travel, and especially railroad travel, is the theme of Chesterfield cigarettes' special Christmas advertising campaign—said to be one of the largest of its type ever undertaken. Distinctive cartons, featuring a railroad terminal waiting-room scene, and TV and radio introduction, on the Perry Como show (left) and others, of a new song, "Home for the Holidays," are only two of the many special aspects of the big campaign.

abrogation of its tie-to-rails policy; it was "an exception to that policy justified by the evidence in this proceeding."

Explanation—"The main purpose for the policy of imposing . . . restrictions," the commission also said, "was to prevent the railroads from acquiring motor operations through affiliates and using them in such a manner as to unduly restrain competition of independently operated motor carriers. This policy was and is sound and should be relaxed only where circumstances clearly establish (1) that the grant of authority has not resulted and probably will not result in the undue restraint of competition, and (2) that the public interest requires the proposed operation, which the authorized independent motor carriers have not furnished, except where it suited their convenience."

The truck routes involved were purchased from independent truckers, and on an unrestricted basis by the RI subsidiary for several years prior to 1951. Then the commission, in a decision upheld by the United States Supreme Court, imposed the usual conditions which are designed to make railroad trucking operations auxiliary to rail services (*Railway Age*, March 5, 1951, page 64).

Section 207 Case—Transit then filed the application out of which the present report has come. It was an application for unrestricted, or "all-motor" rights, under the Interstate Commerce Act's section 207, which provides for issuance of certificates on showings of public convenience and necessity. While the commission was considering the application, it gave Transit some temporary relief from the restrictions.

The commission's favorable action was based on its finding that Transit had made the required showing of public convenience and necessity. Protestants, among whom was American Trucking Associations, contended that the commission lacked authority to grant unrestricted rights to a railroad or railroad affiliate under section 207.

They sought, in effect, to have the commission take the act's declaration of national transportation policy as a directive for reading into section 207 the requirement for a special showing which is called for in section 5(2) (b) when railroads or railroad affiliates are applicants for authority to acquire control of independent truck lines. That special showing must be proof that the railroad will be able to use the trucking service to public advantage in its rail operations.

Broad Power—"We do not subscribe to this view," the commission said. "We may issue certificates to motor carrier affiliates of railroads with or without restrictions as the circumstances may require."

The commission went on to review the development of the tie-to-rails policy, thus coming to the explanation of the policy's application to the present case, as quoted above. The only conditions to which Transit's certificate will now be subject will be one which reserves for the commission the right to impose conditions in the future, and another which requires reporting to the commission of all contractual arrangements between RI and Transit.

The Chicago-Omaha "all-motor" service will be built up by combining the unrestricted authority now granted on an Omaha-Silvis (Ill.) route with like authority already held for operations between Chicago and Silvis. Other routes on which unrestricted authority is granted are between Iowa City, Iowa, and Cedar Rapids; Harlan, Iowa, and Omaha; and Avoca, Iowa, and Atlantic.

The commission's decision was accompanied by separate expressions from Commissioner Alldredge, dissenting, and Commissioner Arpaia, dissenting in part. The former questioned the commission's power "to issue *carte blanche* authority to a railroad to perform unrestricted motor carrier service." Commissioner Arpaia thought Transit had failed to prove that public convenience and necessity required the "all-motor" service proposed. Commis-

sioner Freas was recorded as having concurred "in the result" of the majority decision.

CAB Fixes Temporary Rate on Air Mail Test

With the railroad motion to enjoin the Postmaster General from continuing his "three-cent-mail-by-air" program pending in District Court for the District of Columbia, the Civil Aeronautics Board has fixed temporary rates for the service on the West Coast.

In its order, with Commissioner Josh Lee dissenting, the CAB rejected a petition by the railroads to be admitted to the proceeding as an intervener before the rate was fixed.

The Post Office actually started the service November 22, anticipating the CAB ruling, and paying to the western airlines the 18.98 cents per ton mile rate they had agreed to and which the CAB ultimately fixed.

The railroad suit, as reported in *Railway Age* December 6, page 10, was filed by the Santa Fe, Great Northern, Northern Pacific, Southern Pacific and Union Pacific. Judge Alexander Holtzoff was scheduled to hold a hearing December 13 on their motion to enjoin on the basis of the railroad position that the service is

STATES MAY NOT BAN INTERSTATE TRUCKERS

The United States Supreme Court has ruled that a state may not ban a trucker from its highways, when he is engaged in interstate commerce, as a penalty for violations of state law.

The ruling upheld a similar decision by the Illinois Supreme Court. The state of Illinois had sought to suspend operating rights of the Hayes Freight Lines, charging it with 157 overloading violations. A state law permitted suspensions up to one year for as many as 10 such violations in a year.

The U. S. Supreme Court, in an opinion delivered by Justice Black, said the proposed ban would "disrupt" the carrier's interstate operations from and to other states through Illinois. Such a penalty would amount to a "partial suspension" of its "federally granted certificate," the court held. However, the opinion went on, if "motor carriers persistently and repeatedly violate the laws of a state, we know of no reason why the [Interstate Commerce] commission may not protect the state's interest, either on the commission's own initiative or on the complaint of the state."

The Illinois court had ruled that Illinois was within its rights to suspend the carrier's intrastate rights and the higher court had dismissed an appeal by the trucker on this ruling.

illegal. The Post Office Department has filed its answer to the charge.

The CAB order stated that initiation of the service on the coast by the Post Office and airlines and the filing of the

suit "clearly demonstrate that the fixing of a temporary rate by the Board will not be the cause of or the occasion for the diversion of this mail traffic from the railroads."

period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 21, 1954	79,896	27,607
November 21, 1953	80,673	29,119
November 14, 1954	77,396	27,549
November 14, 1953	78,238	31,144
Cumulative Totals:		
November 21, 1954	3,283,909	1,265,673
November 21, 1953	3,601,994	1,462,128

Figures of the Week

Ten Months' Net Off \$268 Million

It was \$472 million, compared with \$740 million last year—
Net operating income, at \$671 million, was off \$282 million

Class I railroads in the first 10 months of this year had estimated net income, after interest and rentals, of \$472,000,000, according to the Bureau of Railway Economics of the Association of American Railroads. This compared with a net income of \$740,000,000 for the first 10 months of 1953.

Net railway operating income, before interest and rentals, was \$671,488,608 for this year's first 10 months. The comparable figure for the first 10 months of last year was \$952,692,110.

For October, the estimated results showed net income of \$76,000,000, down \$12,000,000 from the \$88,000,000 reported for October 1953. Net railway operating income for the 1954 month was \$90,875,194, compared with \$107,331,352 for October 1953.

In the 12 months ended October 31, the rate of return averaged 3.1% compared with 4.45% in the 12 months ended October 31, 1953.

Gross in the first 10 months amounted to \$7,779,882,274 compared with \$9,016,553,959 in the same period of 1953, a decrease of 13.7%. Operating expenses amounted to \$6,158,779,123

compared with \$6,780,942,483, a decrease of 9.2%.

Twenty-eight Class I roads failed to earn interest and rentals in the 10 months, of which 15 were in the Eastern district, four in the Southern region, and nine in the Western district.

Freight Car Loadings

Loadings of revenue freight in the week ended December 4 totaled 661,797 cars, the Association of American Railroads announced on December 9. This was an increase of 78,282 cars, or 13.4%, compared with the previous holiday week; a decrease of 229 cars, or .03%, compared with the corresponding week last year; and a decrease of 57,527 cars, or 8.0%, compared with the equivalent 1952 week.

Loadings of revenue freight for the week ended November 27, which included the Thanksgiving Day holiday, totaled 583,515 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, November 27

District	1954	1953	1952
Eastern	97,229	98,426	112,156
Allegheny	107,397	120,681	141,919
Poconantas	42,855	41,289	51,427
Southern	107,338	106,371	116,281
Northwestern	70,067	72,425	88,405
Central Western	107,313	105,501	107,424
Southwestern	51,296	51,537	52,759

Total Western Districts	228,696	229,463	248,586
Total All Roads	583,515	596,230	670,371

Commodities:			
Grain and grain products	44,346	38,061	38,985
Livestock	8,596	8,804	8,991
Coal	106,288	105,204	126,660
Coke	8,498	10,594	14,477
Forest products	37,521	36,018	39,297
Ore	17,783	24,715	43,455
Merchandise l.c.l.	54,087	56,311	62,111
Miscellaneous	306,396	316,523	336,386

November 27	583,515	596,230	670,371
November 20	697,346	725,732	811,073
November 13	708,757	727,058	828,750
November 6	695,097	747,868	829,295
October 30	736,233	780,843	862,116

Cumulative total, 48 weeks ... 31,344,605 35,887,756 35,313,399

In Canada.—Carloadings for the seven-day period ended November 21 totaled 79,896 cars, compared with 77,396 cars for the previous seven-day

Supply Trade

Nickel Cadmium Battery Corporation has appointed **Grenville B. Ellis** executive vice-president, effective January 1. Mr. Ellis has been chief of the Power Sources Branch, United States Signal Corps, since 1940, in charge of research and development in the power sources field.

G. L. Call, branch manager of **Graybar Electric Company** at Akron, Ohio, has been appointed Cincinnati district sales manager.

Paul I. Birchard has been appointed vice-president and general manager of **Westinghouse Air Brake Company's** Le Roi division, at Milwaukee. He was previously vice-president and general manager of **Enterprise Engine & Machine Co.** San Francisco.

Stowell C. Wasson, manager of the Chicago and Melrose Park plants of **National Malleable & Steel Castings Co.**, has been elected vice-president in charge of operations.

The **Kerite Company** has appointed **William A. Edwards** as assistant to Vice-President **A. H. Smith**. Mr. Edwards, who joined Kerite as a Railroad department sales representative in 1946, was associated with power and light construction companies before World War II service as an 8th Air Force lieutenant (pilot).

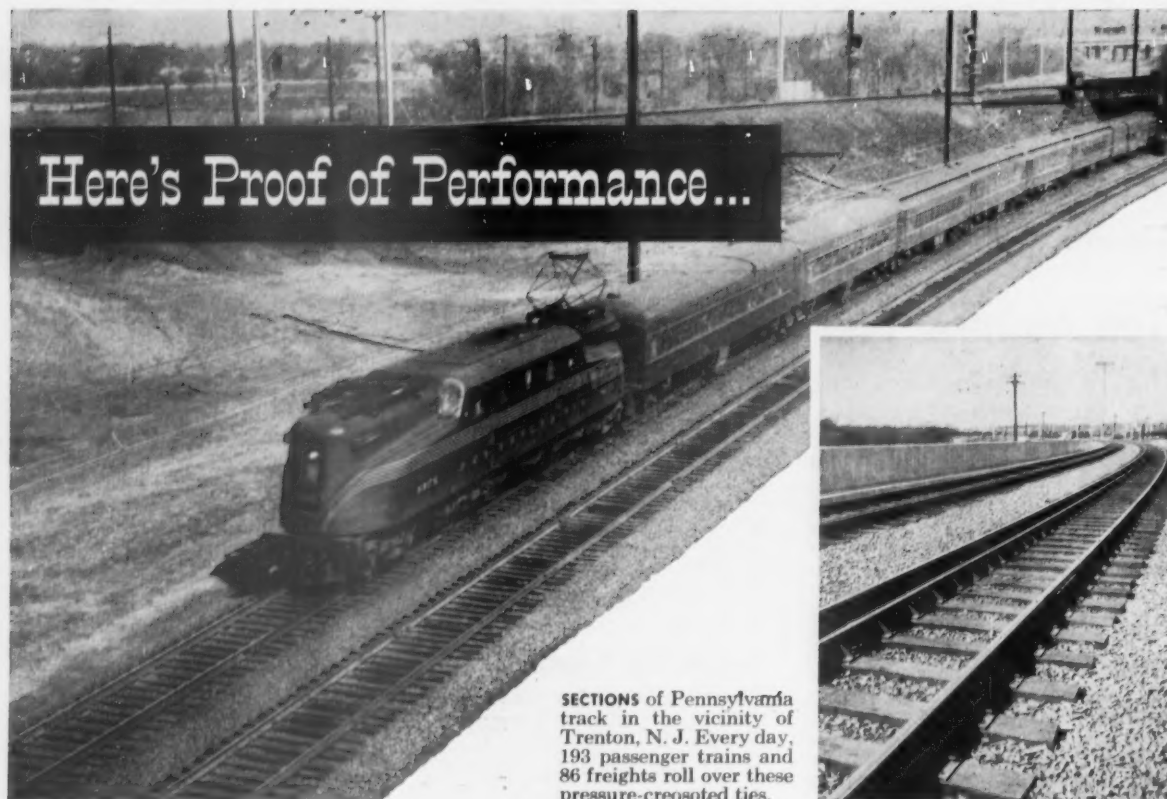
Frederick F. Franklin, assistant district manager of **Vanadium Corporation of America**, at Cleveland, has been appointed district manager there. He succeeds **Paul H. Shaeffer**, who has retired but will continue to serve as special representative.

Le Roi Division of Westinghouse Air Brake Company has named **Don S. Permar**, sales manager of stationary air compressors, to the newly created position of field sales manager.

James G. Rayburn, assistant general sales manager of **Lamson & Sessions Co.**, has succeeded **Robert G. Patterson** as general sales manager. Mr. Patterson continues as vice-president of the company.

The **J. A. Zelle Company**, 842-50 Atlantic st., Bridgeport 4, Conn., has been organized for the manufacture of

CLASS I RAILROADS—UNITED STATES			
Month of October			
	1954	1953	
Total operating revenues	\$ 804,392,236	\$ 934,303,702	
Total operating expenses	611,779,702	693,896,298	
Operating ratio — per cent	76.05	74.27	
Taxes	81,916,541	112,698,177	
Net railway operating income (Earnings before charges)	90,875,194	107,331,352	
Net income, after charges (estimated)	76,000,000	88,000,000	
Ten Months Ended October 31			
Total operating revenues	\$7,779,882,274	\$9,016,553,959	
Total operating expenses	6,158,779,123	6,780,942,483	
Operating ratio — per cent	79.16	75.21	
Taxes	740,059,728	1,085,573,098	
Net railway operating income (Earnings before charges)	671,488,608	952,692,110	
Net income, after charges (estimated)	472,000,000	740,000,000	



Here's Proof of Performance...

SECTIONS of Pennsylvania track in the vicinity of Trenton, N. J. Every day, 193 passenger trains and 86 freights roll over these pressure-creosoted ties.

Pennsylvania Railroad's pressure-creosoted ties are lasting an average of more than 30 years!

• The Pennsylvania Railroad—with its 23,679 miles of track in 13 states and the District of Columbia—stands at the head of the list in annual tie purchases. So it's significant that all but a tiny fraction of a percent of the road's 61 million ties are pressure-creosoted.

Pressure-creosoted ties on the Pennsylvania are lasting an average of more than 30 years. Some untreated ties placed because of necessity in

1942 had a life of only 10 to 12 years. Pressure-creosoted ties by lasting three times as long, are saving the railroad millions of dollars a year on maintenance.

The Pennsylvania favors a hardwood tie, with the majority being red oak. They are treated with Creosote-Coal Tar Solution.

Creosote has proved its effectiveness as a wood preservative in many years of money-saving performance

on the nation's leading railroads—the most convincing evidence of all.

When you use Creosote for ties, poles, posts and timbers, be sure to specify USS Creosote, the uniform product of United States Steel's tar distilling operations. For complete information, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

USS CREOSOTE



UNITED STATES STEEL

4-1492

railway hardware. **M. H. Roberts**, formerly vice-president in charge of railway engineering and sales of the **Barnaby Manufacturing Company**, will be in charge of sales.

OBITUARY

Leonard F. Mueller, chief engineer of Scullin Steel Company, died November 26.

Operations

Young, Perlman, Report on Condition of NY Central

Robert R. Young, New York Central chairman, expressed himself in New York last week as hopeful that the NYC will go on a regular quarterly dividend basis next year. Mr. Young said he will make such a recommendation to the road's directors when they meet in January. He emphasized that his hope was based on the present rising trend in NYC revenues, and added the further "hope" that the quarterly dividend would be 50¢ a share.

Alfred Perlman, NYC president,

said the road's November earnings would be approximately \$5,400,000, on gross revenues of \$59,000,000. Preliminary estimates, he continued, indicate that the road's November operating ratio was about 77.6, the lowest for any month since 1946. He compared it with the November 1953 operating ratio of 86.3.

Mr. Young said that since June, when the new management took over, the Central's expenses have been reduced by 10%. Both he and Mr. Perlman said savings had been realized through consolidation of certain facilities, elimination of others, and installation of modern communication devices.

Fewer Employees—In addition, Mr. Perlman pointed out that the Central's work force now comprises 75,000 employees, the lowest since the New York Central System was created in 1930, and 15,000 below the figure of last June.

Mr. Perlman said the two biggest problems facing him when he took office as the NYC's chief operating officer were those of personnel and the road's physical plant. As an example of the personnel problem, he said that of the 158 top officers at his first budget meeting only 20 were less than 55 years old and 33% will reach retirement age in about 2½ years.

Mr. Young disclosed that the Central is studying the possibility of putting mechanical refrigeration into every fruit car it owns. Another study currently underway, he said, involves the possibility of stopping work on the new bridge across the Harlem river in New York City. The bridge, he went on, will have cost about \$22,000,000 if it is ever completed, and taxes on it will be \$500,000 a year. He emphasized that he does not think a new bridge was needed there.

NYC Would Drop Its West Shore Passenger Service

The New York Central shortly will file petitions for authority to discontinue its West Shore Railroad passenger service and the connecting ferry service between Weehawken, N.J., and New York City (*Railway Age*, December 6, page 3). Both services, the road said, are being provided at a yearly loss exceeding \$2,000,000. The Central, which operates 22 trains on week days in each direction on its River (West Shore) division, added that traffic counts indicate the service is provided now for about 4,000 persons.

First Canadian Lounge Dome Cars on CPR

Dome coaches with a split-level coffee lounge to serve budget-priced meals, said to be the first of their type to operate in Canada, were placed in transcontinental service between Toronto and Winnipeg by the Canadian Pacific on December 6. The cars are part of a \$40,000,000 fleet of 173 matched units which will completely reequip the CPR's transcontinental trains (*Railway Age*, September 27, page 30, and June 29, 1953, page 18, and December 14, 1953, page 121).

"Exciting Times" Ahead, Perlman Tells Engineers

Decrying the fact that industry in this country is kept in the dark about facts on atomic energy, while information on the subject is freely available abroad, Alfred E. Perlman, president of the New York Central, told the annual luncheon meeting of the Railroad Division of the American Society of Mechanical Engineers, in New York, December 2, that "an obligation rests on the U.S. government to give to industry this great new energy." The speaker declared "We're in for some exciting times in the railroad industry"; praised the supply industry for its stepped up research; and promised developments in lightweight passenger equipment next year which will be "interesting."

Also addressing the record-breaking attendance of railroaders and suppliers was Dr. L. K. Sillico, this year's re- (Continued on page 70)



AN EVEN DOZEN railroaders completed the 26th Advanced Management Program at the Harvard Graduate School of Business Administration on December 10. The three months' intensive refresher course brought together more than 160 business executives from a wide range of industries and countries. The railroads' delegation was the second largest.

Expressing the railroad group's evaluation of AMP, James G. Shea, manager public relations, Southern Pacific, at Los Angeles, told *Railway Age* that the course "is not designed to provide answers" but to "teach us how to dope out our own." The school, he said, places the student in the same work situation he faces on the railroad—namely, without time to do all that can be done—and, at the

same time, "makes him distinguish what must be done."

Left to right (seated), are Mr. Shea; J. H. Shaffer, assistant to treasurer, PRR; C. W. Fiddes, general solicitor, StLSW; T. M. Caiazza, assistant to vice-president—traffic, AT&SF; J. N. Meisten, director labor relations, REA; and A. Z. F. Wood, secretary and director, Lancaster & Chester. Standing, in the same order, are P. J. Schweibinz, general coal freight agent, NYC; W. E. Buhite, general superintendent, Pittsburg & Shawmut; H. J. Johnson, general freight agent and regional operating manager, Seaintain; J. N. Broetzman, assistant vice-president—operations, SAL; C. M. Biggs, freight traffic manager, SP; J. C. Borg, freight traffic manager—sales and service, D&RGW.



PERFORMANCE CHARACTERISTICS of thousands of WABCO compositions are on record in our research laboratory. Here, a WABCO sample is being processed on a special laboratory mill.



ON THESE PRODUCTION MILLS, the laboratory formulas are carefully duplicated to insure that you get the proper composition every time you order genuine WABCO parts.

REDUCE YOUR BRAKE MAINTENANCE COSTS WITH GENUINE **WABCO** PARTS

WHEN Westinghouse Air Brake puts a brake device on the market, the research doesn't stop.

Continuously thereafter field reports are reviewed and every effort is made to improve not only the functioning of the device as a whole but the component parts as well. In the case of WABCO products the many compounds are constantly being analyzed with the view toward extending service life.

Westinghouse Air Brake
COMPANY

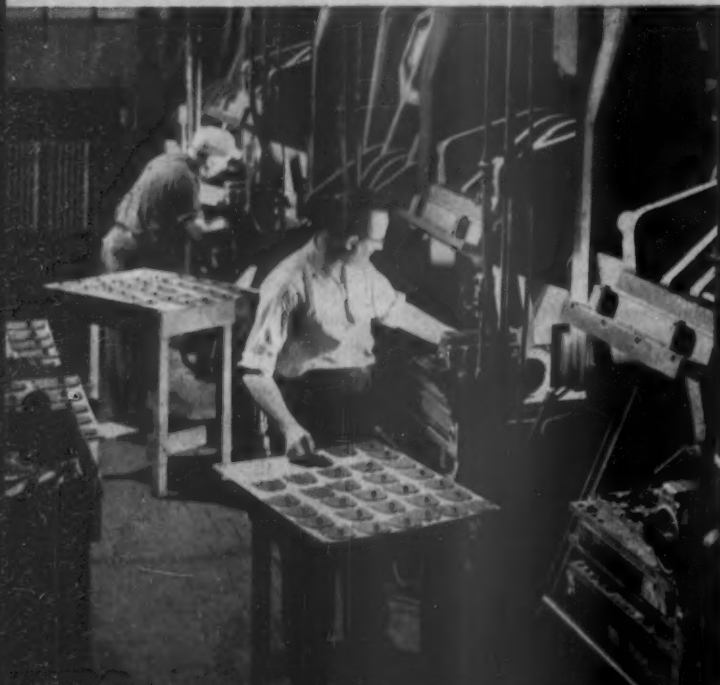
AIR BRAKE DIVISION



WILMERDING, PA.

TO MAKE THE VALVE DIAPHRAGMS shown here, two compounds of different characteristics are vulcanized together. No matter how tough the production problem, WABCO parts are designed to give maximum service.

WABCO PARTS are 100% inspected—each piece is individually checked. The WABCO reputation is upheld by the fact that we completely reject any piece that has the slightest irregularity. The result—WABCO products of uniformly high quality.



HERE'S A
"Made-to-Order" Job
 FOR
UNIONMELT
 WELDING



Installing nailable steel flooring in gondolas and other cars can be done at high speed and low cost using the automatic UNIONMELT method. Welding in all of the flooring of 200 gondolas at the rate of *one car an hour* was recently achieved by a Midwestern railroad. They used two UNIONMELT heads, one on each side of the car, to weld the hold down bars to the side sill and with a second pass to weld the bars to the new steel floor members.

This new use for the automatic UNIONMELT welding method is just one more added to the long list of money-saving applications for car repairs and construction.

Why don't you get more information on how UNIONMELT welding can speed operations and cut costs in your shops.

RAILROAD DEPARTMENT
Linde Air Products Company
 A Division of Union Carbide and Carbon Corporation

30 East 42nd Street  New York 17, N. Y.

Offices in Other Principal Cities
 In Canada: DOMINION OXYGEN COMPANY
 Division of Union Carbide Canada Limited, Toronto

Supplying to railroads the complete line of welding and cutting materials and modern methods furnished for over forty years under the familiar symbol . . .



"Oxweld" and "Unionmelt" are registered trade-marks of Union Carbide and Carbon Corporation.



WEARABILITY

WHERE IT COUNTS MOST



Q C f Chilled Tread Car Wheels give you
extra abrasion-resistance where it counts most, too.

- Their extremely hard tread surface assures a longer service life.
- Their grey iron center reduces cost of mounting... lowers stress concentration...cuts down vibration.
- These valuable characteristics...combined with recent design improvements...result in extra economy for freight services.

Why not call in your nearby **Q C f** Representative and
get all the facts about **Q C f** Chilled Tread Car Wheels?
Q C f Industries, Incorporated,
New York • Chicago • St. Louis • Philadelphia
Washington • Cleveland • San Francisco

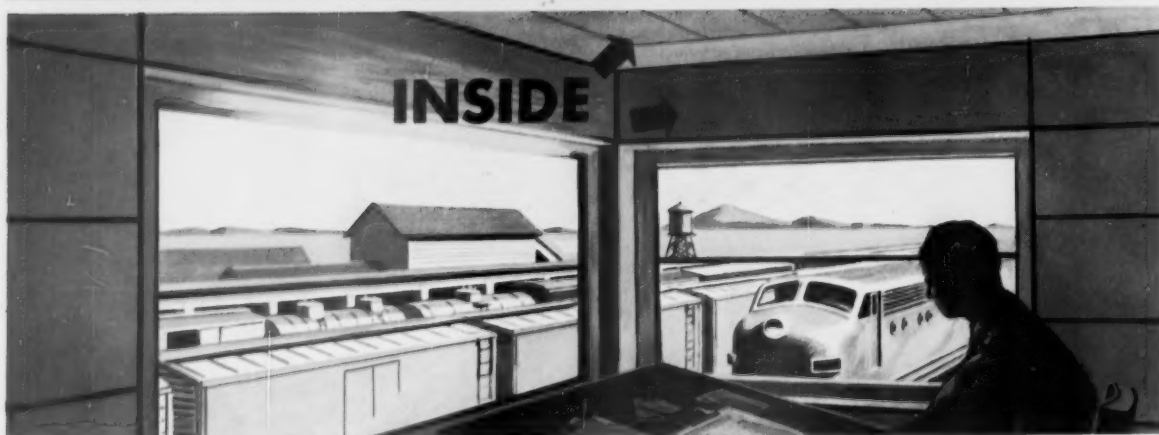


qcf

CAR BUILDERS TO AMERICA'S RAILROADS



Protect against fire!



Safeguard roadway structures with long-lasting, maintenance-free J-M ASBESTOS BUILDING MATERIALS

FIGHT FIRE before it starts by safeguarding your signal towers—outside and inside—with these Johns-Manville Building Materials:



J-M Asbestos Roofing and Siding Shingles—Two materials that solve the problem of inexpensively fireproofing the exterior of any signal tower, old or new! Made of asbestos and

cement, these shingles provide complete protection from communicated fires . . . they are rotproof as well as fireproof, require little, if any, maintenance over the years. Both types can be applied right over the old surfaces on existing structures.

J-M Asbestos Flexboard®—For interior fire protection, cover walls and ceilings with this easy-to-apply, asbestos-cement building board. Furnished in large flexible sheets, it is easy to handle, can be nailed and sawed like wood. Yet Flexboard is tough, strong and durable. Its attractive surface requires no painting, is easy to keep clean, stays good looking indefinitely. Equally adaptable to new construction or for fireproofing the interiors of existing towers.



For full details about J-M materials for railway use, write Johns-Manville, Box 60, New York 16, New York.



Johns-Manville

96 YEARS OF SERVICE
TO TRANSPORTATION



turn *NIGHT* into *DAY*

... at the flick of a switch

Instant, brilliant light to flood the darkest work location makes every night job safe and efficient. That's the kind of utility that a Fairbanks-Morse hand lamp offers you—at the flick of a switch.

What about quality? F-M lamps have sturdy steel weather-proof cases, baked enamel finish. Triple silver-plated reflector for longer lasting reflection. Extra sure battery-to-lamp connections... no wires to fuss with or loosen.

What about price? From single cell to four-cell units, the F-M line of handy portable light units brings you daylight for all night jobs at minimum cost. Write us today for a complete catalog. Fairbanks, Morse & Co., Chicago 5, Illinois.



FAIRBANKS-MORSE

a name worth remembering when you want the best

RAIL CARS AND RAILROAD EQUIPMENT • DIESEL LOCOMOTIVES
AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES
WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS

Streamlite HAIRINSUL



SWINGS Time on your side!

LOW CONDUCTIVITY . . . Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity —.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT . . . Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT . . . Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL . . . Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE . . . STREAMLITE HAIRINSUL is available 1/2" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

HIGH SALVAGE VALUE . . . The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

. . . because TIME has yet to destroy or impair the high insulating efficiency of STREAMLITE HAIRINSUL.

Even after 20 or more years of service, STREAMLITE HAIRINSUL has been removed from refrigerator cars and reused in new cars without need for further processing or renovating.

STREAMLITE HAIRINSUL, the all-hair insulation that actually weighs 40% less and gives so much more in efficiency and economy is a one-time investment.

At left are still more reasons why leading car builders demand STREAMLITE HAIRINSUL. Write for complete data.

Write to:
Merchandise
Mart
Chicago 54



SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED



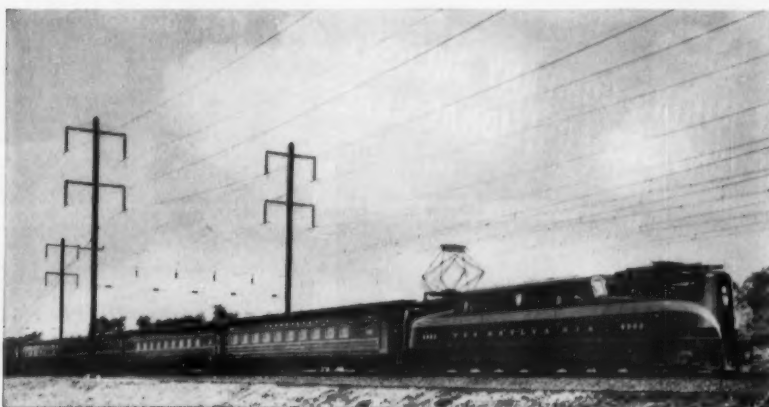
"Many of our 10,138 miles of line carry the heaviest tonnage of freight and the greatest density of passenger traffic in the world," says Mr. S. R. Hursh, Chief Engineer of The Pennsylvania Railroad. "To protect this vast system against derailments that may be caused by hidden rail defects, we test our rail continuously with the Sperry Detector Car."



**Safeguards 10,138 miles
of line with year-round
testing by
SPERRY RAIL SERVICE**



Sperry Detector Car 129 is shown testing the busiest section of track in the U.S., PRR's main line between New York and Philadelphia. "Close cooperation between Sperry crews and division personnel," continues Mr. Hursh, "make scheduling and operation of the Detector Car over our high density track smooth and efficient, with minimum loss of time."



PRR's Broadway Limited, pictured above en route New York to Chicago in electrified territory, is typical of the many passenger trains protected by continuous testing of rail. The Sperry record, more than 2,000,000 miles of detecting smaller rail defects faster and at less cost than any other testing method, assures sound rail in track for the fastest passenger trains and for the heaviest freights.



"Another protection afforded patrons of our passenger trains as well as shippers of freight," states Mr. Hursh, "is the regular checking of side and overhead clearances by PRR's Clearance Car. Knowledge is thus had at all times of side clearance between passenger and freight trains on adjacent tracks, and routes over which freight trains with high and wide loads may operate."



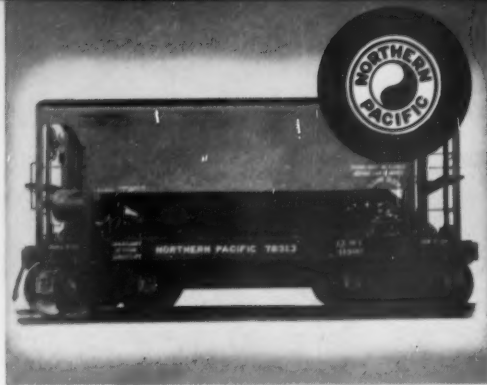
**SPERRY
RAIL SERVICE**

Division of Sperry Products, Inc.

Danbury, Conn.

New York Chicago St. Louis

"Leaders since 1928 in nondestructive testing" is more than a slogan with Sperry. Another important contribution to railroad safety is the ultrasonic Reflectoscope for in-place testing of locomotive axles, car wheels and other equipment. It locates hidden fatigue cracks and other internal defects before failure occurs. Call or write for further information.

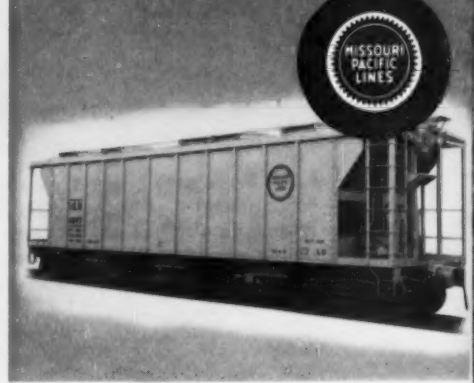
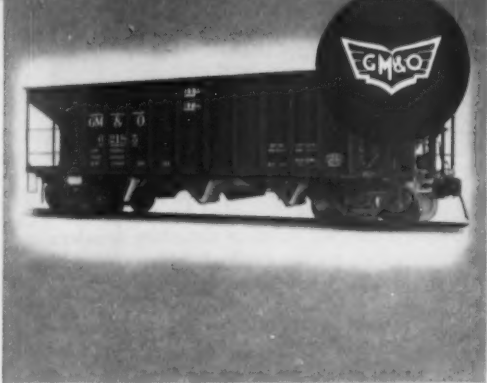


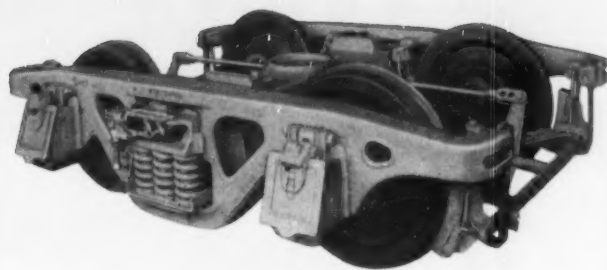
For New Ore



AND NOW...

RESERVE MINING COMPANY CHOOSES A-3's FOR 350 ORE CARS
QNSL ORDERS 850 ADDITIONAL CARSETS





Cars

*Specify smooth-riding
Ride-Control® Trucks
that are tailor-made
for your operations!*

Rarely will you find two ore-hauling problems that are entirely alike. That's why practically all major ore shippers specify Ride-Control Trucks. They know that ASF is the only truck-design specialist in a field where specialization insures the *right equipment for the job*.

Heavy loads and severe grades present many problems. For example, the car must be compact—requiring a truck with carefully designed members and often with odd-size wheel base. Brake design, whether clasp or single shoe, must be *integrated* with truck design . . . a problem on which ASF's combined staff of truck and brake engineers can offer you constructive help. And last but not least, the truck has to ride smoothly so that the car will *work together with the roadbed*, instead of pounding itself into the repair shop.

In short, by any yardstick you use—past experience or present engineering facilities—ASF is in a unique position to design the truck that's right for *your* requirements!

RIDE-CONTROL, A-3

Application based on ASF experience with ore car truck design

Railroad	Carsets
Bessemer & Lake Erie	1,200
Chicago & North Western	300
Duluth, Missabe & Iron Range	5,500
Electro Metallurgical	41
Great Northern	700
Gulf, Mobile & Ohio	100
Louisville & Nashville	252
Soo Line	100
Northern Pacific	600
Orinoco Mining	560
Quebec, No. Shore & Labrador	1,200*

*Made in Canada

TOTAL

~~10,753~~
New Total 11,753

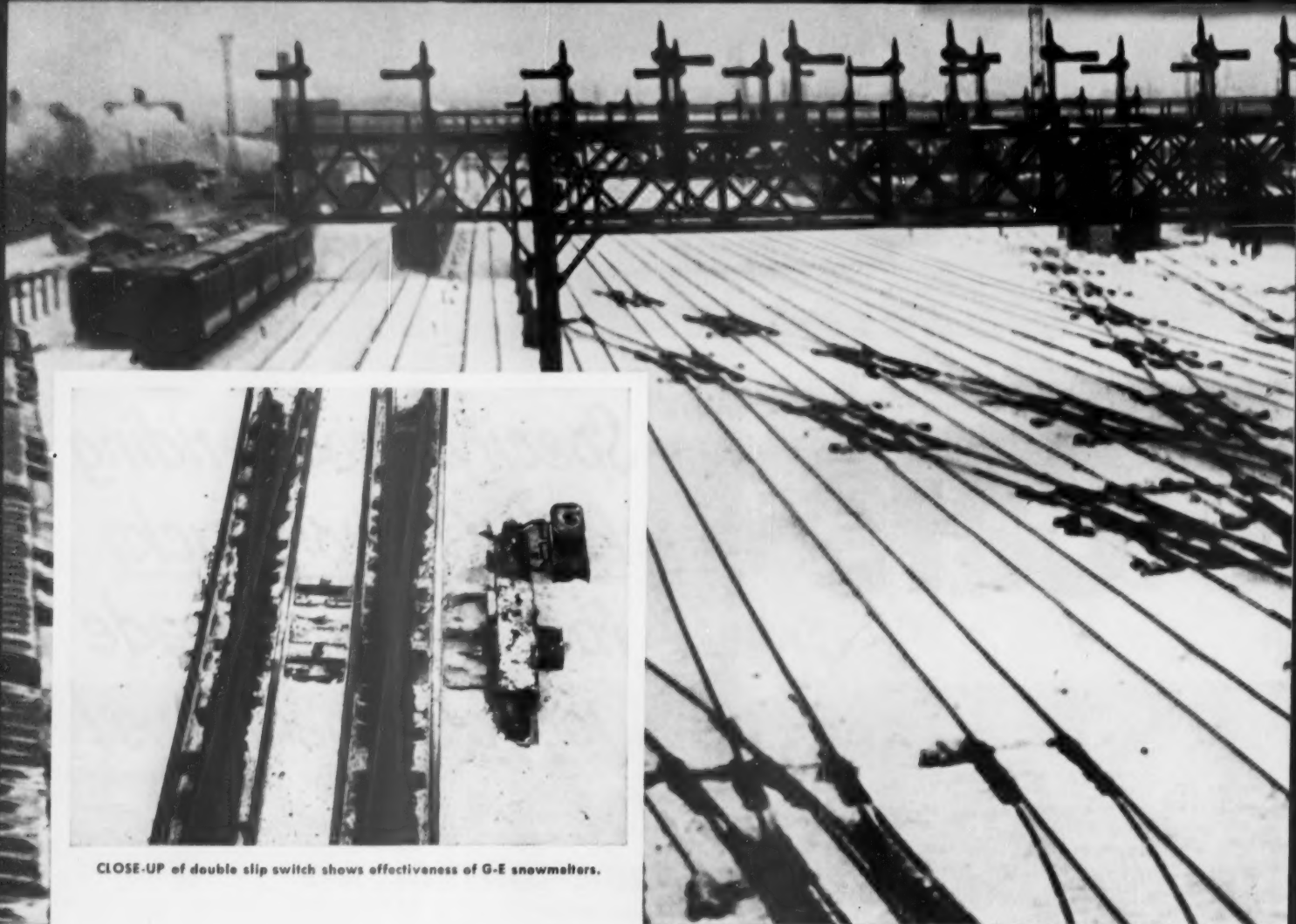
ASF

AMERICAN STEEL FOUNDRIES

410 N. Michigan Avenue, Chicago 11, Illinois

Canadian Sales: International Equipment Co., Ltd.,
Montreal 1, Quebec





CLOSE-UP of double slip switch shows effectiveness of G-E snowmelters.

G-E SNOWMELTERS CAN GIVE YOU AS MUCH AS

COMPARE FOR YOURSELF THE FOUR MAIN METHODS OF SWITCH-HEATING:

Typical yard—85 switches—equivalent winter seasons

Method	Installed Cost	Annual recurring expenses		
		Fixed Charges	Operating Costs	Total
Method A (including labor)	\$600	\$60	\$54,500	\$54,560
Method B (including labor)	8,000	1,200	27,632	28,832
Method C (automatic, non-electric)	98,000	9,800	13,872	23,672
G-E snowmelters (automatic, electric)	50,000	5,000	4,598	9,598

RETURN ON INVESTMENT, ELECTRIC SNOWMELTERS vs METHOD A—89.8%

Typical interlocking—13 switches—equivalent winter seasons

Method	Installed Cost	Annual recurring expenses		
		Fixed Charges	Operating Costs	Total
Method A (including labor)	\$150	\$30	\$12,000	\$12,030
Method B (including labor)	3,000	460	11,025	11,485
Method C (automatic, non-electric)	18,000	1,800	6,068	7,868
G-E snowmelters (automatic, electric)	15,000	1,500	4,000	5,500

RETURN ON INVESTMENT, ELECTRIC SNOWMELTERS vs METHOD A—43.5%

COMPARATIVE SWITCH-HEATING ECONOMICS, above, are estimates, based on operating costs of leading railroads and AAR Committee I Report of 1952. To give you a representative picture, two basic types of installation are analyzed here.



GENERAL ELECTRIC SNOWMELTER SYSTEM WORKS AUTOMATICALLY TO KEEP SWITCHES OPEN, ELIMINATING NEED FOR EMERGENCY SWITCH-CLEANING CREWS

89.9% ANNUAL RETURN ON YOUR INVESTMENT

The economics of switch-heating is this simple—when you consider all the factors, the electric method is your most inexpensive protection against winter snow and ice.

As shown in the tables on the left, your expenditures for any method of switch-heating break down into installation costs and annual recurring expenses. Annual recurring expenses cover not only operating costs, but also the very important item of fixed charges. The comparison of the four principal methods of switch-heating shows that with a Calrod® electric snowmelter installation in an 85-switch yard your annual expenses are 59.4 percent less than with the next most economical method. In a 13-switch interlocking your expenses are 30.1 percent less. This kind of savings means that G-E snowmelters in your installation could give you a first-year return on your investment of as much as 89.9 percent.

PUSH-BUTTON PROTECTION

The General Electric snowmelter system is automatic, flameless, and reliable. Hazards to personnel, track, and rolling stock, inherent in manual switch-cleaning methods, are eliminated. These snow-

melters can be turned on at the touch of a button when the storm starts. All switches are heated simultaneously, so the problem of keeping up with the storm is a thing of the past. Snow melts as it hits, and ice gets no chance to form. Since there is no flame, the steady, uniform heat given off by electric snowmelters is not appreciably affected by gusts of wind, or snow thrown up by passing trains. With a Calrod heating system, your maintenance is almost negligible.

General Electric can supply all the electric apparatus for a complete snowmelter system. By ordering a "packaged" product from this one reliable source, you secure the advantages of a co-ordinated system, designed specifically for your application by experienced engineers. To get more details, ask your General Electric Apparatus Sales Engineer for descriptive bulletin GEA-5482. Or, write for it to: General Electric Co., Section 152-55, Schenectady 5, N. Y.

*Reg. Trade-mark of General Electric Co.

Progress Is Our Most Important Product

GENERAL  ELECTRIC



17,000 refrigerator cars have been built



USS HIGH STRENGTH STEEL

better with USS COR-TEN steel since 1933

Refrigerator car operators rely on USS COR-TEN Steel in the body structure ...to fight corrosion and to reduce time out for repairs in high mileage service

PERHAPS the best way to explain why USS COR-TEN Steel construction is so widely used in refrigerator cars today, is to cite the case of General American Transportation Corporation which has built a total of 2,700 such cars with COR-TEN Steel and has used it in *all* new refrigerators built for its line since 1948.

This is of particular significance when you consider one important fact. General American provides under contract many refrigerator cars to carry meat packers products. It not only builds these cars but repairs them. What is more, *it stands all the expense for repairs.*

Under these circumstances the natural, common sense thing to do is to build with steel that will keep repairs low. General American has found such a steel in USS COR-TEN. And so have other large builders of refrigerator cars. As a result, more and more refrigerator cars are being built with strong, tough, corrosion-resisting COR-TEN Steel.

It is not hard to understand why these cars stand up better and require the minimum of maintenance.

Construction with USS COR-TEN Steel which has 50% higher yield point than structural carbon steel and a 60% higher endurance limit, assures greater durability in high mileage service. And of special importance in refrigerator car operation, where corrosion really puts the bite on equipment, is the fact that COR-TEN Steel offers 4 to 6 times the resistance to atmospheric corrosion of carbon steel . . . in its resistance to brine spray deterioration, COR-TEN Steel is considerably more effective than copper steel . . . and even in marine atmospheres COR-TEN Steel has more than twice the corrosion resistance of copper steel.

If you want to reduce maintenance costs in your freight equipment get the facts about USS COR-TEN Steel. We'll be glad to give you the very good reasons why it is now used in more than 180,000 freight cars.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NEW BOOK GIVES THE COMPLETE STORY OF USS COR-TEN STEEL

Every railroad man concerned with the more efficient operation and maintenance of freight equipment should have a copy of this recently published book. It's **FREE**—send for it. It fully describes this premier high-strength, corrosion-resistant steel and shows why in the 20 years of its wide application in the railroad field "Built with USS COR-TEN" has come to mean, "the best in freight car construction."



UNITED STATES STEEL



**INSUTAPE
YOUR LOCOMOTIVE
STEAM PIPING
TO CUT
EXPENSIVE
HEAT-LOSS**

Write for new Insutape Folder No. 76-135. It gives comparative fuel-cost savings, pipe-coverage figures, sizes, and complete specifications.



UNION ASBESTOS & RUBBER COMPANY

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

WHAT INSUTAPE IS:

Insutape consists of long-fiber asbestos rovings enclosed within a tubular, woven-asbestos jacket. Exposed surfaces and edges are heavily Neoprene-coated for high resistance to abrasion and the penetration of moisture, oil, and grease. Spiral wrappings are easily worked by the hands into snug pipe fit. Wire bands or clamps, at intervals, hold the insulation firmly in place.

WHAT INSUTAPE DOES:

- Wraps easily over even hard-to-get-at piping.
- Saves fuel.
- Protects personnel in cab.
- Provides a neat and trim appearance.
- Withstands wind, weather, heat, and vibration.
- Permits unlimited use and re-use without loss of thermal efficiency.

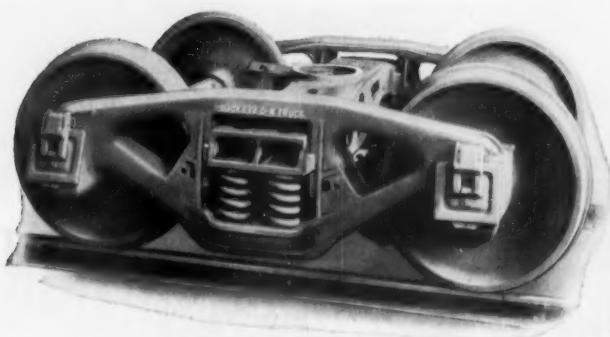
ANOTHER

Buckeye

EXTRA

..AT NO EXTRA COST!

**ACCURATE UNIPLANE* JIG GRINDING
OF JOURNAL BOX LID FACE IMPROVES CLOSURE**



FOR COMPLETE INFORMATION . . CALL or WRITE

Refer Adv. No. 11872

✱ First featured on Buckeye's
famed **C.R.** (Cushion Ride) truck .
now standard process on all Buckeye
trucks with integral journal boxes.

The
Buckeye Steel Castings Co.

B
• COLUMBUS, O.
• NEW YORK, N.Y.
• CHICAGO, ILL.
• ST. PAUL, MINN.

8 TIMES AROUND THE WORLD ...



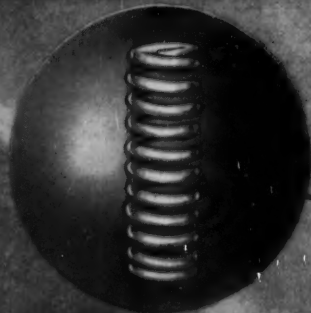
FRICION WEDGES

Because of large bearing areas, both flat and convex surfaces of the original wedges showed negligible wear at any point; wedges should last as long as the car

FRICION MECHANISM STILL IN TOP CONDITION ...

Technical Center
Chrysler

Chrysler Group Research



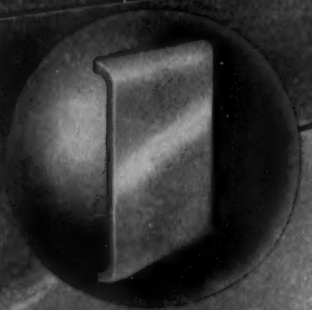
WEDGE SPRINGS

Original springs, still in good condition, should last the life of the car. None were broken, none had a permanent set—even after 200,000 miles.



BOLSTER COLUMN LUGS

Only contact between bolsters and frames is with *outside* bolster column lugs. Greatest wear measured on any lug was less than $\frac{1}{32}$ ", even less wear on vertical columns.

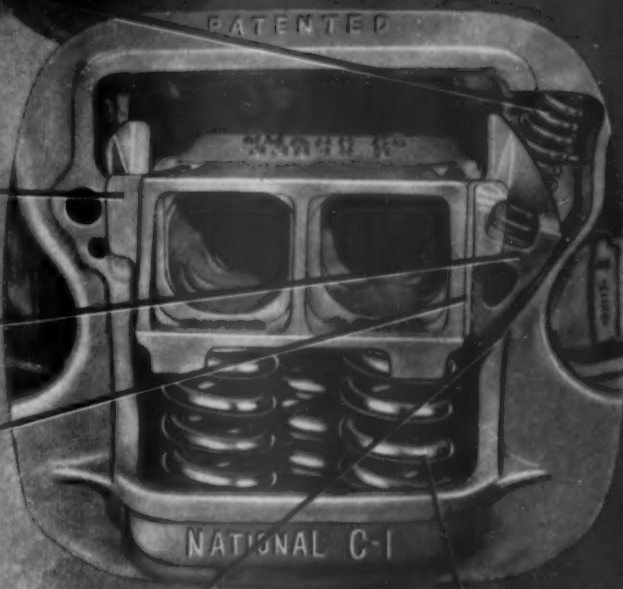


FRICTION WEAR PLATE

Plates showed negligible wear and full-width bearing. Spring steel plates, slightly less hard than wedges, give maximum wear resistance to both wedge and plate.

WEDGE POCKETS

Side frame pockets showed negligible wear, no scoring or gouging. Full-width bearing of wedge against side frame pocket distributes pressure evenly over large area.



LOAD SPRINGS

Light coil contact showed few oversolid blows, proving efficiency of C-1 truck friction mechanism.



PROOF OF THE NATIONAL C-1 TRUCK'S LONG LIFE

The "control center" of a smooth-riding freight truck is the friction control mechanism. Hence, wear life of this mechanism controls how long the truck will continue to give you what you paid for—a smooth, "lading-conscious" ride.

A recent control center inspection of National C-1 trucks, after 200,000 miles in rugged service,

proves that the friction control mechanism is strong, powerful and long lasting—designed for the entire life of the car. Furthermore, the excellent condition of wheels, journals, bearings, and bearing wedges—all original equipment—shows that C-1 trucks hold maintenance costs to a minimum.

NATIONAL MALLEABLE and STEEL **CASTINGS COMPANY**

Cleveland 6, Ohio

CORPUS CHRISTI, DALLAS, DENVER, EL PASO, HOUSTON, KANSAS CITY, LOS ANGELES, MEMPHIS, MINNEAPOLIS, NEW ORLEANS, NEW YORK, PHILADELPHIA, PITTSBURGH, ST. LOUIS, ST. PAUL, TAMPA, WASHINGTON, D.C.

The RIGHT way on the Right-of-Way!

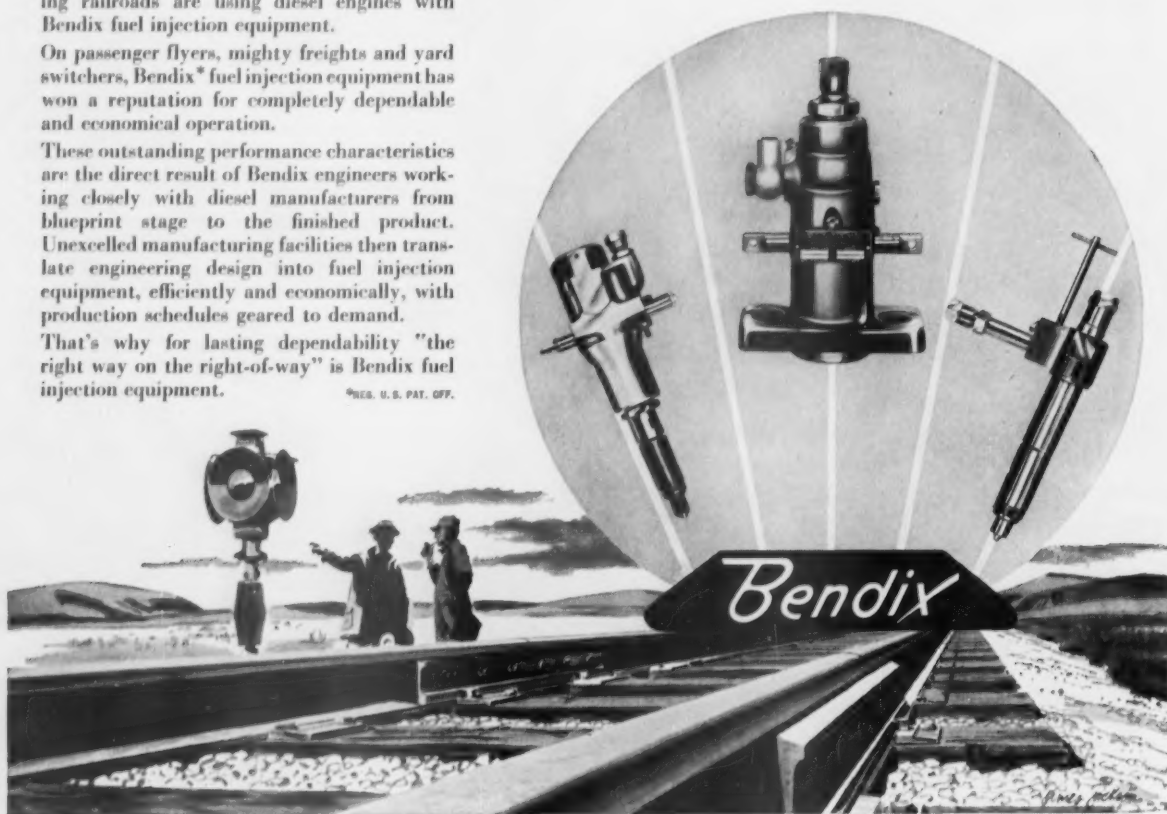
Fuel injection equipment is truly the heart of diesel performance and plays a mighty important part in efficient railroad operation. That's why an ever-increasing number of leading railroads are using diesel engines with Bendix fuel injection equipment.

On passenger flyers, mighty freights and yard switchers, Bendix* fuel injection equipment has won a reputation for completely dependable and economical operation.

These outstanding performance characteristics are the direct result of Bendix engineers working closely with diesel manufacturers from blueprint stage to the finished product. Unexcelled manufacturing facilities then translate engineering design into fuel injection equipment, efficiently and economically, with production schedules geared to demand.

That's why for lasting dependability "the right way on the right-of-way" is Bendix fuel injection equipment.

*REG. U. S. PAT. OFF.



SCINTILLA DIVISION OF **Bendix** • SIDNEY, NEW YORK
AVIATION CORPORATION

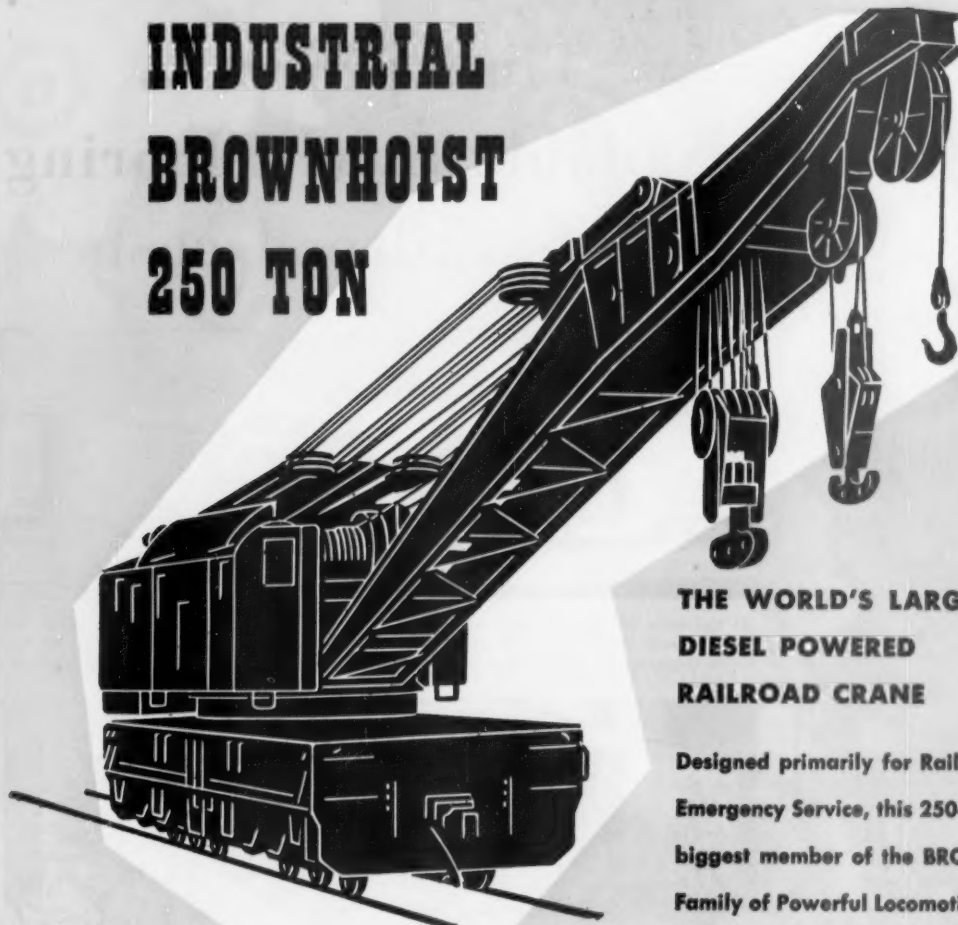
Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.



...YOU CAN DEPEND ON

BENDIX*
FUEL INJECTION
EQUIPMENT

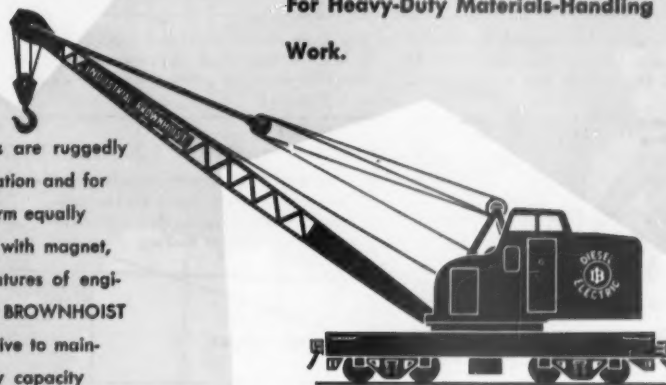
INDUSTRIAL BROWNHOIST 250 TON



THE WORLD'S LARGEST DIESEL POWERED RAILROAD CRANE

Designed primarily for Railroad
Emergency Service, this 250-Ton Crane is the
biggest member of the BROWNHOIST
Family of Powerful Locomotive Cranes
For Heavy-Duty Materials-Handling
Work.

Brownhoist Diesel Locomotive Cranes are ruggedly
built for continuous, heavy-duty operation and for
long, dependable service. They perform equally
well as switch engine or crane and with magnet,
hook or bucket. Many advanced features of engi-
neering design and construction make BROWNHOIST
Cranes easy to operate and inexpensive to main-
tain. Standard models to meet every capacity
requirement. Write for complete information.



BROWNHOIST builds better cranes

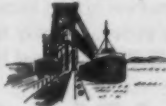
CLAM-SHELL BUCKET



COAL-ORE BRIDGE



CAR DUMPER

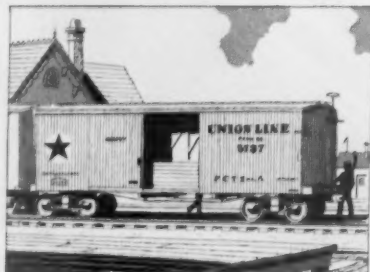


**INDUSTRIAL BROWNHOIST CORPORATION, BAY
CITY, MICHIGAN • DISTRICT OFFICES:** New York City,
Philadelphia, Cleveland, San Francisco, Chicago; Canadian
Brownhoist Ltd., Montreal, Quebec • **AGENCIES:** Detroit,
Birmingham, Houston, Los Angeles.

158-A



Time proves... Nailable Steel Flooring cuts railroad costs



At the turn of the century, when cars were mainly constructed of wood, frequent shopping for repairs was necessary.



Steel was progressively used to give cars more strength and durability. An important part, the floor, was by-passed.



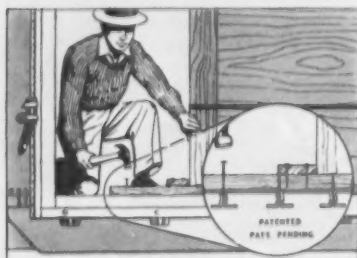
Some freight must be secured by blocks nailed in place, so that the nailability of wood kept it in use for car floors.



But such floors require frequent maintenance, increase operating expenses, and cut revenue earning potential. (See chart.)

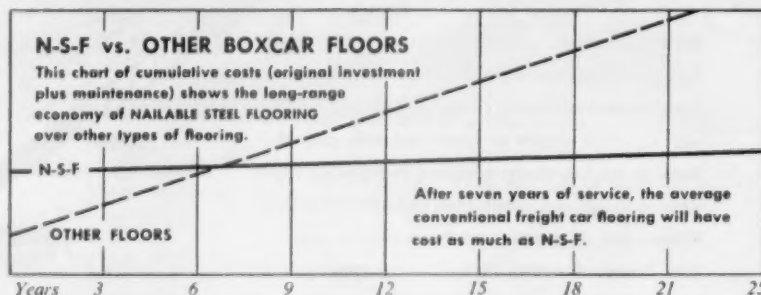


N-S-F provides a positive means to cut maintenance costs and improve car supply—another forward step with steel.



N-S-F channels are made of low-alloy N-A-X HIGH TENSILE steel welded together to form a unique nailing groove. Nails are gripped tightly to improve blocking security, yet can later be readily removed.

COMPLETE engineering and cost data available from Great Lakes Steel Corporation, Steel Floor Division, Ecorse, Detroit 29, Michigan. Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal, and New York.



Like many improvements, NAILABLE STEEL FLOORING costs more initially than the material it supplants. But substantial savings in maintenance begin immediately and its cost is progressively reduced.

So an investment in N-S-F helps to improve operating ratio and pays off handsomely over a long period. It's easy to see why NAILABLE STEEL FLOORING is already in use in over 18,000 cars owned by more than 55 railroads.

GREAT LAKES STEEL CORPORATION
UNIT OF
NATIONAL STEEL CORPORATION

NAILABLE STEEL FLOORING
PAVES THE WAY TO THE ALL-STEEL FREIGHT CAR

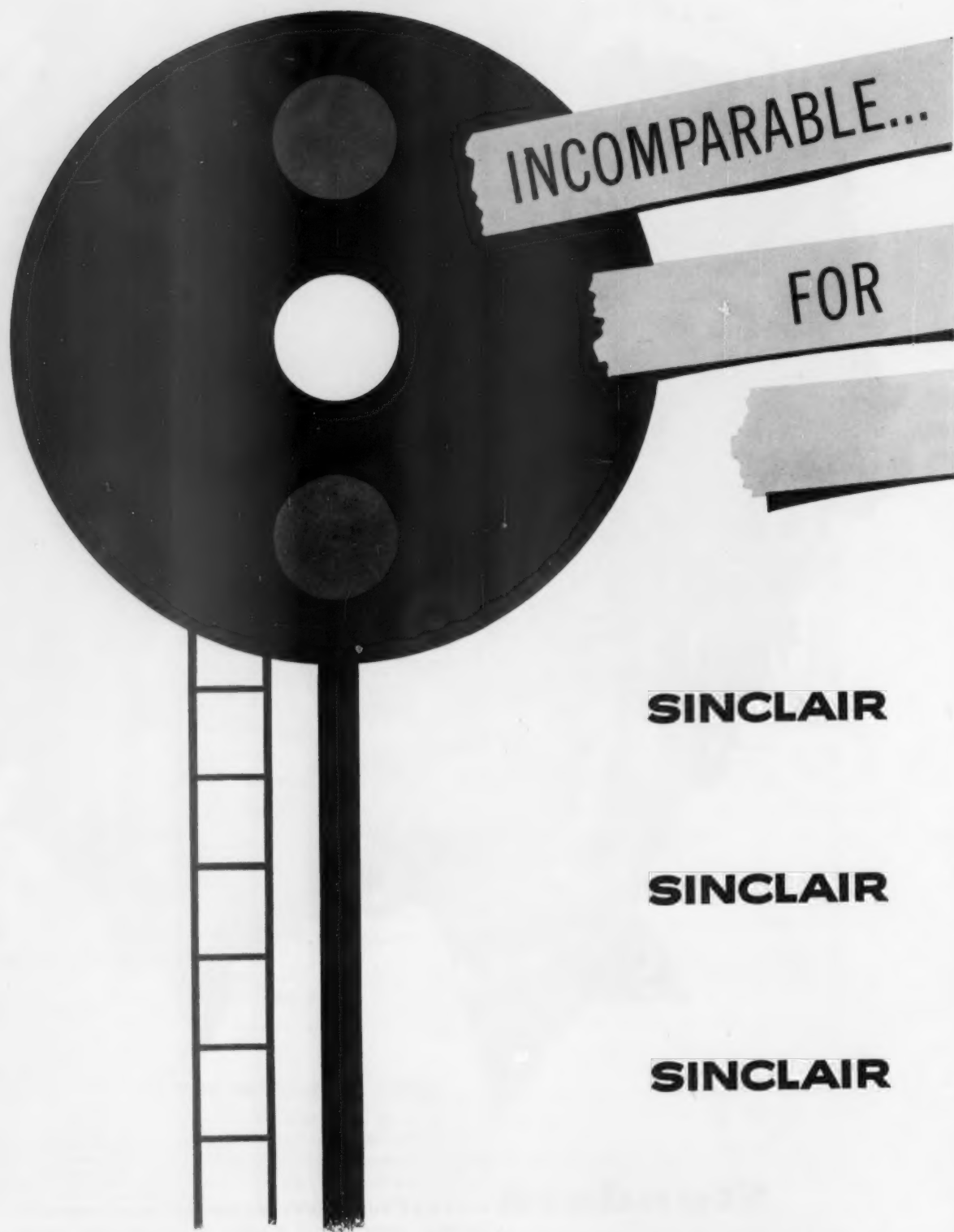


SERVING THE RAILROADS SINCE 1889.

Standard RAILWAY EQUIPMENT MANUFACTURING COMPANY

GENERAL OFFICE: 4527 Columbia Avenue, Hammond, Indiana
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RAILROAD LUBRICATION

GASCON DIESEL OIL

Sinclair GASCON® Diesel Lubricating Oils are used and preferred by more than 100 American railroads. Such a record is as outstanding as the quality of the oils themselves.

JET LUBRICANT TM

More than 70 railroads now use JET. Three years of heavy-duty testing give on-the-job proof that it is best for Diesel traction motor gears.

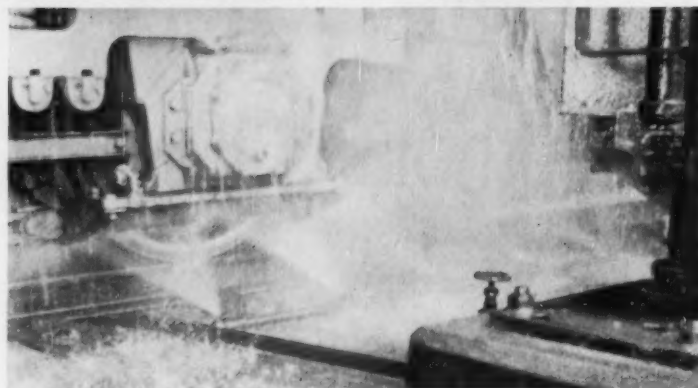
LITHIUM ROLLER BEARING GREASE

In test after test, this lubricant for Diesel locomotive and car journal roller bearings is proving markedly superior.

COMPANY RAILWAY SALES
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Save Money

Clean diesel
wheels and trucks
with automatic
Oakite "track-trip"
spray-washing



Oakite automatic "track-trip" wheel cleaning set-up saves money. It prevents solution and rinse water waste. Top picture, cleaning. Bottom picture, rinsing.

YOU ARE LOOKING at a set-up for cleaning and rinsing diesel wheels and trucks. It was designed by Oakite for a big Western Railroad. These pictures were taken at that yard.

THIS ROAD wanted to eliminate costly, time-consuming manual cleaning. They were looking for some simple, inexpensive mechanical method ... one they could build themselves in their own yard.

HERE'S HOW IT WORKS. Pressure, transferred from wheel flange to track tripper, depresses valves for spray cleaning. Solution spray responds only to wheel pressure. Spraying stops as wheel pressure diminishes.

RESULTS. Considerable savings in solution upkeep and less waste of rinsing water since spraying occurs only as wheels enter spraying area. No time wasted for manual valve adjustments. No hand scrubbing.

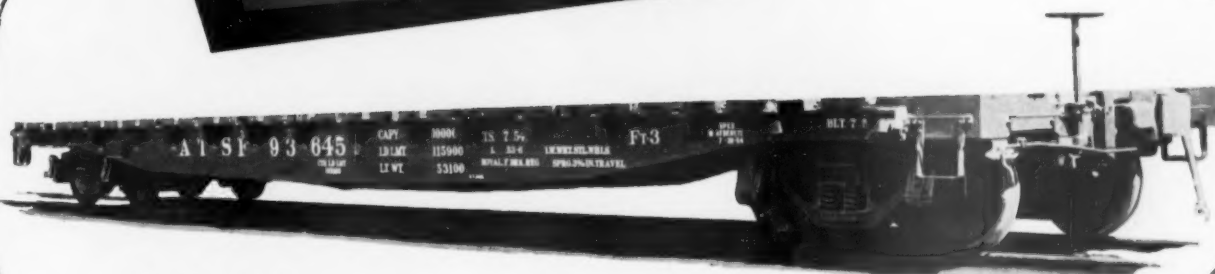
If you'd like more information on washing diesel wheels and trucks just drop us a line. We'll be glad to send you complete details, drawings.

Oakite Products Inc., 46 Rector Street, New York 6, New York

OAKITE

RAILWAY DIVISION

Here's Long Life!



A.T. & S.F. Flat Car
53' 6" long—50-ton capacity

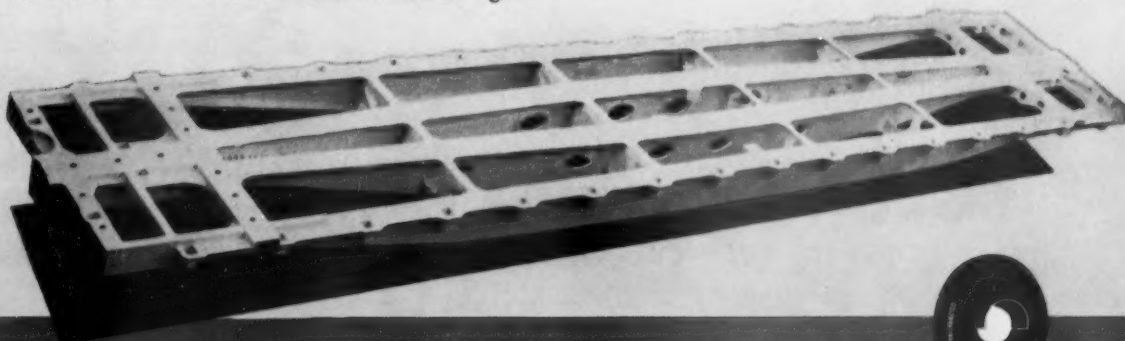
New Santa Fe Flat Cars With One-Piece Underframes are BUILT TO LAST!

Modern railroading is particularly tough on freight cars and flat cars are often called the workhorse on rails. The backbone and foundation of the flat car is the underframe. COMMONWEALTH One-Piece Cast Steel Underframes combine great strength with minimum weight and provide *maintenance free* performance.

Other advantages of COMMONWEALTH Underframes include unusually strong draft sills, draft gear pockets, striking castings and bolsters — flared center sills and wide top members providing better support for decking and loads — cast steel assures highest resistance to corrosion.

Thousands of flat cars with COMMONWEALTH Cast Steel Underframes — in service for years — prove these facts. Build *your* flat cars to last longer. Specify COMMONWEALTH Underframes. Write for information and standard designs.

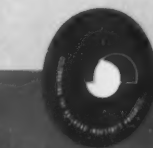
One-Piece
Cast Steel
Underframe



GENERAL STEEL CASTINGS

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✓ Ship by Rail

✓ Travel by Rail



LONG LIFE

LOW UPKEEP!

*That's what you can expect
from your Diesels...
when you use Gargoyle
Diesel lubricating oils!*

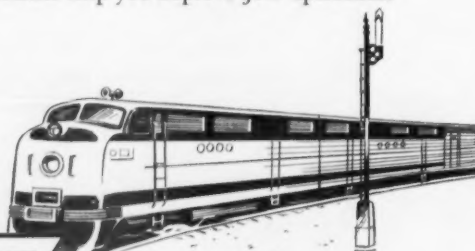
Fewer repairs and overhauls...greater economy...greater availability—that's what you can expect from your Diesels when you protect them with Gargoyle Diesel lubricating oils.

We cooperated closely with operators and builders to develop these fine oils. In them, we have incorporated every known quality for improving Diesel performance...exceptional detergency, effective anti-foaming action, high resistance to oxidation, unusual wear-resisting properties.

Today, continuing and exhaustive field evaluations on major roads are proving the ability of these famous oils to keep Diesels running at top efficiency.

Why not let our products, experience and research facilities help you improve *your* operations?

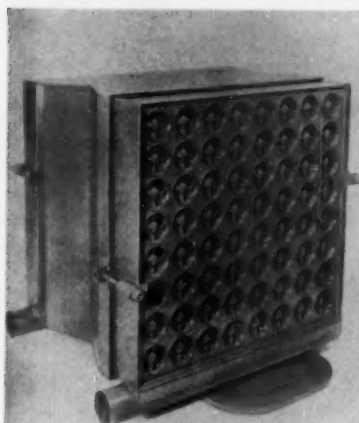
SOCONY-VACUUM
CORRECT LUBRICATION



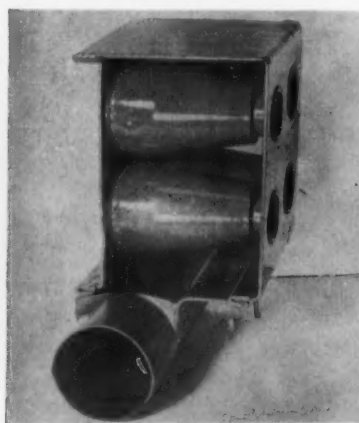
**WORLD'S GREATEST
LUBRICATION KNOWLEDGE
AND ENGINEERING SERVICE**

SOCONY-VACUUM OIL COMPANY, INC., Railroad Div., 26 Broadway, New York 4, N. Y.

What's New in Products



Rotonamic filter panel with two 64-tube panels mounted in adapter. At right Rotonamic four-hole unit in its present form.



Rotonamic Air Filters

The Rotonamic air cleaner for diesel locomotives is the result of a development program initiated in 1948. Today, these development phases are complete and considerable service history has been accumulated.

The familiar panel type, viscous coated, cleanable air filter is widely used for engine air cleaning with or without carboy filters. The success of this system of air cleaning depends on regular filter changes and a well controlled filter cleaning and reoiling program. The cost of maintenance can be reduced if the service life of the filter can be extended without endangering engine life.

A cyclonic type of air cleaner offered about the only feasible means of operating without filter maintenance. High efficiency of the impingement type filters in use required that the cyclone element be small in diameter.

To reduce maintenance to a minimum a bleed-off type of cyclone was decided upon as providing the best means of continuous removal of the separated dust. The space available for installation required that the unit be compact and have a high air handling capacity per cubic feet of occupied space.

The performance characteristics of the unit, as originally developed and now manufactured, are said to show 68 per cent efficiency on the 0 to 5 micron fraction, 96 per cent efficiency on the 5 to 10 micron fraction, and close to 99 per cent on a mixture of particles 10 microns and over.

Rotonamic air filters were first applied to two locomotives destined for Saudi Arabia. Operating conditions were made difficult by frequent sand

and dust storms. Various systems of air cleaning had been tried, but none was reported as giving a reasonable life. The filter box mounted a total of 16 Rotonamic panels on three sides. The bleed air carrying the dust was manifolded from each panel to ducts opening to the atmosphere through the floor.

Each bleed connection was throttled to the correct 10 per cent of air inlet flow. The cleaned air then passed through a 4 in. impingement filter into the engine room. Four more Rotonamic filters filtered the air entering the engine from the engine room. Tests have also been conducted on several American railroads using the General Motors Type F-7 locomotive.

The objective of this development was to increase effective filter life and to improve the protection of the engine with the additional benefit of removing engine air cleaner maintenance from the field of manpower failure. *Farr Company, Los Angeles, Cal. •*

Steam Cleaning Compound

This compound was prepared for safe and efficient use in steam cleaning equipment. It is a heavy-duty liquid detergent concentrate which should be used after dilution with water, either hot or cold, to remove dirt, grease and soil from metal, cement, stone, or painted or lacquered surfaces.

The formulation has been found effective in dilutions of 2 oz to 6 oz of water for cleaning of floors, truck and trailer bodies and in building maintenance programs. It may also be used for degreasing metal parts in tank-soak operations.

According to the manufacturer, this ST-35 compound is non-combustible and does not create toxic vapor hazards. It should not be used without dilution on aluminum or alkaline-sensitive metals. The product is available in 54-gal drums and in 5-gal drums. *John B. Moore Corporation, P.O. Box 3, Nulley 10, N.J. •*



Conduit Fitting

A new series of oval-covered, flat-backed conduit fittings has been introduced. The ferrous alloy castings, with tapered machine-cut threads, have



This AAR-approved replacement wheel for geared freight car hand brakes is interchangeable on five makes of vertical geared freight car hand brakes. The manufacturer points out that its use reduces initial cost and the number of wheel makes that must be carried in stock, thus simplifying inventory-keeping. *Corley Company, 1 Exchange Place, Jersey City, N. Y. •*

More New Products

many interchangeable features to meet varied electrical conduit fitting requirements for machinery wiring as well as plant maintenance and new construction. The large flat-back area is said to be easily drilled for secure mounting on vibrating machines. *Pyle-National Company, 1334 North Kostner ave., Chicago 51, Ill.*



Car Coopering Kit

Utilizing a strong Fiberglas-reinforced kraft paper, oak posts and steel strapping, this method of sealing or coopering railroad freight cars reportedly has been tested in 5,000 car loadings of grain and grain products.

In loading box cars, the doors are first barricaded to a given height, usually 8 ft for malt and about 5½ ft for grain. After a spout fills the car, the car's permanent doors slide shut to be sealed. The coopering kit consists of two sheets of paper, each large enough to barricade one door to the proper height. Vertical oak posts in the center of each doorway are connected by steel strapping through the interior width of the car.

The unit is installed by nailing the edges of the paper to the inside of each door with the steel strapping between the oak posts taut across the middle of the car. The average car of grain contains 100,000 lb, of which 15,000 lb is borne directly by the paper reinforced by the posts and strapping.

The method also makes possible accurate control over unloading flow. In unloading, a hole is usually cut in the paper near the bottom of the barricade. The manufacturer states that the reinforced paper will maintain a constant size hole without ripping. *A. J. Gerrard & Co., 1950 Hawthorne ave., Melrose Park, Ill.*



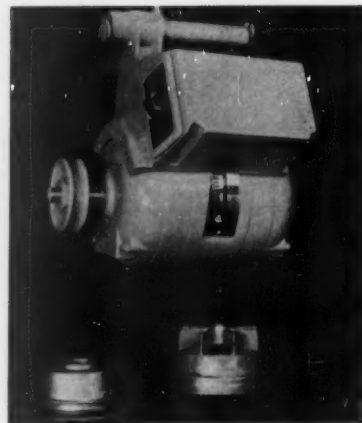
Roller-Applied Finish

Paint loss from overspraying is said to be eliminated with a new roller-applied aluminum finish applicable to storage tanks and other industrial facilities.

Known as Kem-Plate aluminum finish, the material, according to the manufacturer, covers uniformly without lap marks, speeds painting of metal structures and requires less scaffolding than brush application. Long-handled rollers are used to apply the material on bulky facilities and shorter-handled rollers can be used on other installations, such as steel woven fence. After the surface has been primed, Kem-Plate finish is applied at package consistency. The material dries to touch in 1 to 4 hr, and dries to recoat in 24 hr. Approximate coverage is 700 to 800 sq ft per gal. *Transportation Sales Division, Sherwin-Williams Company, Cleveland, Ohio.*

Electra Precool Motors

A new Electra Precool motor for "holding service" is especially designed to meet requirements for successful operation of all Preco refrigerator-car fans. The need for this type motor was expressed by both shippers and receivers and it is now available at ½-hp and ¾-hp ratings and in single-phase as well as 3-phase design.



The Electra Precool motor for "pre-cooling service" has been redesigned to give shippers the latest improved equipment for operating the "Preco" type fans. *Electra Motors, Inc., Anaheim, Cal.*



Asbestos Insulating Rope

Caposite pure asbestos rope for insulation of curved and irregular piping, bends, fittings, valves, expansion joints, engine exhausts, furnace door packing, etc., is composed of long-fiber Amosite rovings, twisted together to the correct diameter and retained within a braided reinforcing jacket of asbestos yarn.

The asbestos rope contains no organic reinforcing fibers. The manufacturer states that the product cannot rot or deteriorate, it insulates effectively up to 1,200 deg F, and can be removed and reapplied at temperatures to 750 deg F. *North American Asbestos Corporation, Board of Trade Building, Chicago 4.*

HERE'S MONEY SAVING TIP #3

from the GOULD Plus-Performance Plan

Installing Diesel, Air Conditioning And Car Lighting Batteries

The service-life of railroad batteries can be considerably extended through proper handling and installation. The Gould Plus-Performance Plan shows you how to install diesel and air conditioning batteries so they will give maximum service.

YOU CAN DO IT
YOURSELF IN YOUR
OWN SHOP

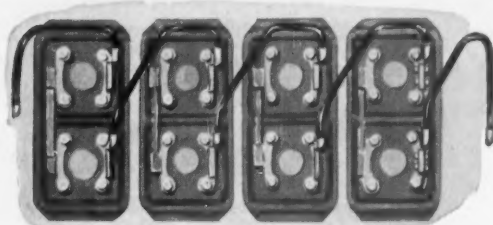
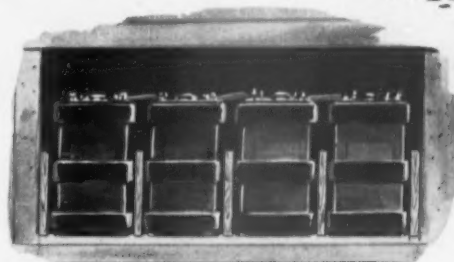


1. Placing Batteries in Compartments

Clean out compartment and paint the inside. Do not drop into position . . . slide battery from a platform level with the bottom of the compartment to prevent possible breakage. Use of a lift truck is ideal.

2. Block-in Batteries For Protection

To prevent battery from shifting in the compartment all trays should be properly blocked. Care should be taken to avoid tight wedging. Clearance of $\frac{1}{8}$ " should be left between the battery trays to take up shock.



3. Making Terminal Connections

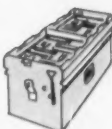
Connections should be made carefully with a little slack, but not enough to allow cables to become crushed between trays. Clean terminals, grease terminal posts, lugs and inter-tray connector lugs with non-oxide grease. Draw up connector bolts to a snug fit.

GOULD Batteries

GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.



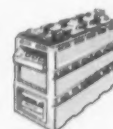
For Railroad
Air Conditioning
and Lighting



For Mine
Shuttle Cars
and Locomotives



For Electric
Industrial
Trucks



For Diesel
Locomotive
Starting



For Standby
and
Emergency Power

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Always Use Gould-National Automobile and Truck Batteries

There are many ways in which you can cut battery costs. Giving strict attention to battery installation is but one. The complete Gould Plus-Performance Plan gives you hundreds of dollar-saving tips and covers every phase of battery use and care. Send for it and start saving. Mail the coupon TODAY.

BATTERY INFORMATION HEADQUARTERS

Dept. RA-124 Trenton 7, N. J.

Please send me, without charge or obligation, the Gould Plus-Performance Plan for _____ batteries.
(type or types)

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

To move vital Venezuelan ore from Mobile to the Mills...

1000 OF THE MOST MODERN

and every one rolls on **HYATT ROLLER BEARINGS!**





FREIGHT CARS EVER BUILT...



1000 tons of ore per hour is unloaded from ship's hold by giant clamshell bucket



Endless belt conveyors ore along the docks from unloading crane to the transfer point



1000 special cars with the most modern devices were purchased by four railroads



Inclined conveyor lifts ore to a weighing station and car-loading bins above tracks



Ore moves from Mobile to Birmingham mills on one of fastest schedules in history



Every car has HYATT Roller Bearings to assure delay-free delivery of the vital ore

RUNNING MATE OF FASTER FREIGHT



STRAIGHT

BARREL

TAPER

Almost daily, down at the Mobile docks operated by Marine Bulk Handling Corporation, a rich, red flood of high-grade iron ore pours from a ship's hold into long strings of new hopper cars. Some 250 miles north, the Birmingham blast furnaces hungrily await this vital Venezuelan ore from Cerro Bolivar, the hill of iron discovered and developed by United States Steel. This is the story of how it speeds from Mobile to the mills of United States Steel's Tennessee Coal and Iron Division.

The job is so big, so vital to American security, that four progressive railroads pooled their resources to expedite it. Acting jointly, the Gulf, Mobile and Ohio, the Louisville and Nashville, the St. Louis-San Francisco, and the Southern purchased a whole fleet of specially-designed hopper cars with the latest devices for safe and efficient operation. One of the most important specifications was roller bearing journal boxes.

The roads knew that roller bearings would cut hours from the running time between terminals and help assure delay-free delivery by licking the hot box problem. They knew, too, that roller bearings would sharply reduce motive power, lubrication and inspection costs. The only question was what make of roller bearings to buy. And after careful comparison of all types, feature for feature, the choice was easy: HYATTS! All four railroads specified free-lateral, easy-to-install Hyatt Journal Boxes—100%!

Here's proof again that when railroads get all the facts about roller bearings, they're wise to choose HYATTS! Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

ROLLER BEARING JOURNAL BOXES



The Budd-built new full-length dome lounge car sets a new standard in railroad luxury.

119 new Santa Fe cars wired with OKONITE-OKOPRENE



Expanding its famous high-quality service, the Santa Fe is adding 119 new Budd cars to the El Capitan, Chicagoan, Kansas Cityan and the new San Francisco Chief. The coaches, baggage and mail cars, and the full-length dome lounge cars are all wired with Okonite-Okoprene, the service-proved quality car wire.

Unique electrically operated features make the new two-level lounge cars the height of luxury. The upper lounge service bar is supplied by means of an electric dumbwaiter. Indirectly illuminated table tops give soft lighting; the upper level "Starlite" lighting system does not obscure outdoor views. Heating and air conditioning, carefully planned by Budd

engineers, make the interior completely climate controlled. Electric power for the full-length dome cars is supplied by a 40-kw. 220-volt, three-phase, a-c, diesel-driven generator.

Santa Fe and over 100 other Class I roads use Okonite-Okoprene cables in their systems for yard wiring, signal circuits and diesel electric locomotive wire, in addition to car wire. The composite mold-cured insulation and sheath provides the electrical strength and mechanical toughness that has given this construction its reputation of service proved reliability.

Ask your Okonite representative for information on Okonite-Okoprene, or write for Bulletin RA-1078 to The Okonite Company, Passaic, N.J.



OKONITE



insulated cables

2329

T-O-F-C—Adolescent

An adolescent is unsettled and uncertain—timid in some matters, courageous and forthright in others. That is the state of "piggyback" today. Individual railroads have taken courageous steps in providing new equipment, service and rates for a wide range of types of service by trailers-on-flat-cars. At the same time, many in the business have painful doubts about this type of traffic. Some, for example, fear its effect on the railroad rate structure; others see dangers in traffic "raids," intentional or otherwise, beyond the extent of owners' rails.

The adolescent grows painfully and unevenly—and with impatience. So does piggyback traffic. For example: most of the roads which established T-O-F-C for rail-billed freight found at first that volume fell far short of their expectations. They forgot, perhaps, that it took the trucks 25 years to take away the high-rated traffic and that it is not to be recaptured overnight. They may have overlooked, too, the fact that for some commodities, the truck has come to be the conventional carrier. To those engaged in such trades, the railroad is a strange animal. In some cases, railroad traffic salesmen long since quit calling on these shippers, because there was no hope of success. Now that they have a competitive service to offer, the names of these producers will get back on traffic department "prospect lists" and railroad solicitors will again learn to know them and how to approach them successfully.

Since the rail-operated services, in most cases, offer a parity of rates and rules with those of the truckers, shippers have not been eagerly disposed to change their habits until a "plus value" in the railroads' new service became evident. It now appears that this "plus value" has appeared and is making itself felt—in the form of faster overall transit time and more reliable performance than over the highway, on the longer hauls. An encouraging, if not rapid, growth in use of the railroads' service is reported by most roads engaged in the experiment. Slow growth was also encountered in the early days of those piggyback services involving the movement of trailers for the trucking industry. At least one of them has now become a large volume operation.

Adolescents are argumentative. They are inclined to see everything in vivid blacks and whites.

The piggyback business has also seen some verbal fisticuffs, in which some of the proponents of "move-your-own-trailers" (otherwise known as Plan No. 1) and the "carry-the-truckers'-trailers" (Plan No. 2) protagonists appear to feel they are engaged in a mutually exclusive struggle for life and death of one of the two plans.

This paper, for one, fails to find any compelling reason why these forms of piggyback should be mutually exclusive, or what harm there is in the railroads trying both.

From a strictly theoretical standpoint—and the whole question must be theoretical until there is more experience with relative costs and revenues—the railroads would seem to benefit most from operating their own trailers, because they will be both retailers and wholesalers; and will get the whole rate and control the traffic at its source.

On the other hand, the movement of truckers' trailers has the practical virtue of tapping an immediate and large source of existing traffic, without slow and painful build-up, and the trucker pays most of the terminal cost and all of the expense of dealing with the shipper. One railroad president favors piggyback for highway common carriers because "the trucker is a customer, and I welcome customers."

Adolescents have trouble finding clothes to fit. Piggyback is in a similar plight. These are days of great ferment in ideas for equipment. Some of them are described elsewhere in this issue. There are many more which cannot yet be described because they have not been tested in actual service, or are not yet available for purchase. This bold experimentation is good.

The current use in piggyback service of conventional highway trailers and more-or-less-conventional flat cars serves two purposes: (1) It keeps investment in new equipment fluid, since both trailers and cars can be used for other purposes; (2) It provides equipment with which both railroad and trucker forces are thoroughly familiar and leaves management to concentrate on the more immediately important problems of services and rates.

As volume is built up, however, it will become necessary to eliminate the physical waste involved in moving a trailer with full highway running gear atop a rail car. Equipment designed specifically to save space, weight and expense of tie-down in coordinated service will become essential. If the service is to develop as it should, then it ought not to carry the burden of useless and costly appendages. It is healthy and natural for an adolescent to try everything.

T-O-F-C—Infancy to Adolescence

By JOHN W. MILLIKEN
Traffic and Transportation Editor



RAILROAD SERVICE
TO YOUR DOOR

RAILROAD SERVICE
TO YOUR DOOR



RAILROAD SERVICE
P.M.T. 3280

SOUTHERN PACIFIC 1410

"Piggyback" expansion is certain for '55—Railroad opinion on hauling truckers' trailers still not settled.

Despite the fact that *trailer-on-flat-car* operations go back at least to 1926, in some ways the "modern" or "adolescent" era of this service may be said to have begun in the late summer of 1953 when General Motors corporation demonstrated its plan for handling this type of traffic. Prior to this only one technique for handling this traffic—that is, end or circus loading—had been seriously considered.

The new technique, plus the General Motors enthusiasm, fanned smoldering embers into fire. People who had been leisurely studying the advisability of trailer-on-flat-car operations really went to work. Then, early in 1954, the New York Central announced that it would go into "piggybacking" à la General Motors, hauling traffic of highway common carriers. This traffic was to be secured for the railroad by E. F. Ryan's Rail Trailer Company. Following this announcement, other eastern carriers got into the act, and were ready to go by mid-June 1954, only to have their proposed tariffs suspended by the Interstate Commerce Commission. Less than a month later, however, they were able actually to begin operations, as the commission lifted its suspension. Since July of this year an impressive number of carriers in both the East and the West have entered into piggyback operation, while the woods are full of inventors with equipment designed to meet the railroads' problems in coordinating rail-highway operations.

How It Began

Prior to this "adolescent" era of piggyback, the Chicago North Shore & Milwaukee, inaugurating the service, began handling trailers on flats in May of 1926. In the intervening 17 years to 1953 such roads as the Alton (now part of the GM&O) in 1932, the Chicago Great Western (1936), the New Haven and Burlington (1937), the Rio Grande, the Rock Island, the Chicago & Eastern Illinois, the Southern Pacific, the Union Pacific, the Cotton Belt, the Santa Fe, the Detroit & Mackinac and the two major Canadian railroads all had tried out trailer-on-flat operations. (For a concise review of the early days of piggyback see *Railway Age*, November 4, 1950.)

One or more of these roads practiced trailer-on-flat operations hauling all the kinds of traffic handled today, i.e., trucks of common carrier trailers, their own lcl, etc. The New Haven, of course, was by far the most successful of all, at least as far as developing any really substantial volume of traffic was concerned. The New Haven, of course, was—and still is—handling mainly trailers of common carrier trucks. In the meantime, few were the major railroads which were not studying the subject with varying degrees of intensity.

There were many railroaders, however who apparently doubted that the traffic was very profitable—if indeed it was profitable at all—to the New Haven. Consequently, in spite of the best efforts of Mr. Ryan and Rail Trailer, and others, sentiment grew for complete railroad control of the operation. (The notable exception to this generalization was the Katy.) And for the time being at least, during piggyback's adolescence, this philosophy seems to have won out.

At about the time of the General Motors exhibit at LaGrange, Ill., in September of last year, one of the problems which had been bothering some railroads,

namely, what a railroad legally could and could not do in handling trailers of highway carriers, was dragged out into the open when the New Haven submitted its famous "twenty questions" to the Interstate Commerce Commission (*Railway Age*, October 12, 1953, page 34).

The "Twenty Questions"

Substantially, what the New Haven asked from the commission was a set of decisions, in the form of a declaratory order, which would make clear under which conditions the railroad could do business with common carrier truckers, contract and private truckers, and freight forwarders. The commission, in effect, reduced these questions to 12 in number and docketed the inquiry as Ex Parte 31375, on which hearings were held beginning June 28, 1954.

In the meantime, the Pennsylvania, Baltimore & Ohio, Lackawanna, Erie, Nickel Plate, and Wabash announced their intent to begin trailer-on-flat operations, starting about mid-June of this year. All these roads intended to carry freight in their own trailers at truck-competitive rates. But on June 14, two days before most of the tariffs of these roads were to take effect, the commission suspended them (I&S docket 6214), mainly on the motion of truckers, for seven months. The eastern roads obviously were not unprepared for this and immediately filed a petition with the ICC asking that the suspension be lifted. In support of their petition the carriers stated that the suspension would discourage attempts by railroads to furnish new types of improved service for the public; the service was being practiced elsewhere; and that their equipment had been procured and was ready.

While the tariffs of the eastern roads still were under suspension, hearings were begun by the ICC on its version of the New Haven's "twenty questions." Having in mind their suspended tariffs, the eastern railroads, in their presentations, told the commission that trailer-on-flat-car service in all its forms involved bold experimentation of the kind the commission frequently had suggested to the carriers.

While the truck-competitive tariffs of the eastern roads were under suspension, and the hearings on Ex Parte 31375 were going on, piggyback activity did not cease. The Lackawanna, which for some time had been hauling, on an experimental basis, some of its own lcl in t-o-fc

"Our experiment to date has been satisfactory, and we currently are extending the service to other segments of our railroad. Our relationship with those common carriers which have used and are using our service has been most cordial and satisfactory. . . . We have made certain revisions in our charges which are proving mutually beneficial to the railroad and the cooperating truck lines, and we have improved both our equipment and our techniques for handling trailers. I am more firmly convinced than ever that this cooperative venture entered into in good faith by both agencies, offers a bright hope for the entire transportation industry."—D. V. Fraser, president, Missouri-Kansas-Texas, in a special statement to *Railway Age*.

service (at rail rates), continued to do so. Also, on July 6 the Missouri-Kansas-Texas began piggybacking both its own trailers and those of common carrier truckers between Kansas City and Oklahoma City. Freight in its own trailers was handled at rail rates, while the charge to the common carrier trucker was on a per trailer basis, length and gross weight of the trailer and load determining the charge.

The Katy's president, D. V. Fraser, in explaining his railroad's attitude, a deviation from the 1954 "normal," said that truckers had the traffic. Railroads could only get any substantial volume of this traffic by indicating to the truckers that t-o-f-c operations were mutually beneficial to the highway operator and the railroad and that the latter did not want to step between the trucker and his customer. The railroad's own trailers, in the Katy plan, were merely to be an added convenience to the railroad's existing customers.

On July 9 the ICC lifted its suspension of the tariffs of the eastern carriers, but announced that the tariffs still were under investigation. Then on July 12, the PRR, DL&W, Wabash, Nickel Plate, and Erie began their services, with the B&O following on July 20. Meantime, the New York Central, the first of the eastern roads to announce that it would try piggyback, still had set no beginning date for its t-o-f-c operations.

On July 28, hearings on the investigation of the eastern railroads' tariffs were begun and lasted several days. Truckers contended that the service could not be profitable and asked that the ICC have the railroads present cost data, etc. Hearings then were adjourned until September.

What the ICC Decided

Shortly after these first hearings on investigation of the eastern railroads' tariffs were adjourned, the ICC made its pronouncement on the 12 questions (*Railway Age*, August 16, page 7). The most basic of the commission's pronouncements was one which said that transportation of trailers on flats was railroad transportation, for which a motor carrier certificate was not required. Thus a railroad, clearly, was free to transport its own freight in its own trailers. This finding knocked the main prop from under the truckers' protest on piggyback.

Also, the ICC put its stamp of approval on the railroads' pick-up and delivery service as part of the overall performance of piggyback. The commission further said that it was permissible for the railroads to transport trailers of private carriers because such carriers were shippers. The same was true of trailers of freight forwarders (as shippers) and of common carrier truckers. However, the ICC stated, trailers of common carrier truckers can be transported only under arrangements involving rail-motor joint rates and through routes. Trailers of contract carriers, the commission decided, could be carried only to points not served by the contract carrier, with the latter acting as agent for the actual shipper. Thus the contract carrier could haul a trailer to the end of its route and then, acting as agent for the shipper, send the trailer farther on a flat car.

During September further hearings in I&S docket 6245 were held by the commission, at which time the railroads presented cost data on their trailer-on-flat operations.

Most of the figures presented had to do with amounts spent for constructing terminals, converting flat cars, and renting trailers.

The carriers also gave some cost and time data on the loading and unloading of the flat cars. The PRR, in its testimony, said that about 10 minutes were required either to place a trailer on a flat or to remove it therefrom, and that direct labor costs for securing the trailer were \$1.58, while cost for releasing the trailer were \$1.06. The Wabash gave the lowest cost figures for tying down (\$1.06) and releasing (\$.55) the trailers. These hearings ended with the truckers pretty much dropping their protests. But to date of closing this issue, no word has come from the commission on its findings in relation to the tariffs.

On September 28 New York Central President A. E. Perlman announced that his road's piggyback plans were being held in abeyance pending further study. Since that date, the NYC has speeded up two eastbound freight trains to provide second morning service between Chicago and New York. Mr. Perlman has stated that such service "may be the answer to piggyback."

More Roads Offering Service

In the meantime, practically all roads which began handling trailers on flats in 1954 were expanding their operations to include more terminals and a greater number of points served from those terminals by substituted truck service. There will be more next year.

About January 1, 1955, the Reading, Western Maryland, Pittsburgh & West Virginia and Nickel Plate expect to begin moving trailer-load traffic between the Philadelphia-Camden area and Chicago. And at some later date the NKP, P&WV and WM will move piggyback traffic between Chicago and Baltimore. On January 15, the Monon will offer trailer-on-flat service between Chicago on the one hand and Indianapolis and Louisville on the other. And, of course, the Pennsylvania is expected to begin moving the trailers of motor common carriers on flats about January 3. As of the moment, there is no indication that the PRR will not continue handling trailer-load business in its own equipment at truck-competitive rates. Other likely 1955 marchers in the piggyback parade are the Milwaukee and the Boston & Maine. And with the B&O beginning to handle "TOFCEE" traffic into and out of New York, the Jersey Central will be active.

The Cotton Belt, which years ago experimented with t-o-f-c, and resumed its operations on September 1, hauling trailers of its subsidiary trucking company, probably will be expanding its operations in 1955. And, the Detroit & Mackinac, which recently suspended its piggybacking operations after several years in the field may also get back into action.

Although almost all railroads answering a *Railway Age* questionnaire about trailers on flats indicated they thought the business so far had been profitable, or showed promise of becoming so, there is little doubt that they regard their terminal costs as much too high. In some cases the loading, unloading and securing costs alone amount to a very substantial portion of the revenue received for the haul. Certainly it is generally believed that new techniques and equipment to reduce these costs are needed.



T-O-F-C in Review—

ATCHISON, TOPEKA & SANTA FE

TYPE OF BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—All freight: November 1, 1954.

TERMINAL AREAS SERVED—Chicago and Kansas City; effective November 15, service provided between Los Angeles and San Diego.

EQUIPMENT IN SERVICE—

Flat cars: 10 converted, length 60 ft.

Trailers: 20, owned by subsidiary, lengths 24 ft and 32 ft 6 in.

TRAINS HANDLING TRAFFIC—Special train No. 44, leaves Kansas City 5:30 p.m., arrives Chicago 7 a.m. first morning.

IN CHARGE OF SERVICE—C. O. Bunce, general freight agent, Chicago.



BALTIMORE & OHIO

TYPE BUSINESS HANDLED—Rail-billed LCL at truck-competitive rates.

SERVICE BEGUN—LCL: December 12, 1952.

TERMINAL AREAS SERVED—Philadelphia, Pittsburgh, Baltimore, Chicago, Cincinnati, St. Louis-East St. Louis. Service to be expanded soon to include Wheeling, W. Va.—Steubenville area and New York.

COST OF TERMINALS—\$30,250 (reported to ICC in September).

EQUIPMENT IN SERVICE—

Flat cars: 35 new, length 53 ft. Cost \$2,000 each to equip for service.

Trailers: 150 leased, length 24 ft.

NUMBER TRAILERS HANDLED THIS YEAR (no LCL)—108 (to Nov. 5).

MOST TRAILERS MOVED IN ONE DAY—6.

TRAINS HANDLING TRAFFIC—"Time Saver" merchandise trains.

IN CHARGE OF SERVICE—J. C. McGohan, general freight traffic manager, Baltimore 1, Md.



CANADIAN NATIONAL

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—For truckload freight: July 20, 1954.

TERMINAL AREAS SERVED—Montreal, Toronto and Hamilton.

COST OF TERMINALS—\$14,650.

EQUIPMENT IN SERVICE—

Flat cars: 22 converted, length 52 ft 6 in. Conversion cost \$5,000 each.

Trailers: 28 owned, lengths 20, 22 and 24 ft. Cost \$3,879 each.

EQUIPMENT ON ORDER—

Trailers: 16, length 22 ft.



More on next page



SPECIAL REPORT:



NUMBER TRAILERS HANDLED THIS YEAR (LCL only): 4,568 (to October 31).

MOST TRAILERS HANDLED ONE DAY—26.

IN CHARGE OF SERVICE—H. F. Walker, assistant general superintendent transportation, Toronto, Ont.

CANADIAN PACIFIC

TYPE BUSINESS HANDLED—Rail-billed LCL at truck-competitive rates; Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—LCL: December 1, 1952; For truckload freight: January 1, 1954.

TERMINAL AREAS SERVED—Montreal and Toronto. Expansion is under study at present.

COST OF PROVIDING TERMINALS—None.

EQUIPMENT IN SERVICE—

Flat cars: Number not available, length 46 ft. Cost not available.

Trailers: Number not available, length 22 ft. Cost not available.

IN CHARGE OF SERVICE—Canadian Pacific Cartage Company, Montreal and Toronto.

CHICAGO, BURLINGTON & QUINCY

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Common carrier truckers' freight of subsidiary trucking company.

SERVICE BEGUN—LCL: May 1954; For truckload freight: March 1941.

TERMINAL AREAS SERVED—Chicago, Peoria, Moline, Quincy, Galesburg, Kewanee, Ill.; St. Louis, Mo., and Kansas City; Denver; Ottumwa, Iowa; Casper, Wyo.; Omaha, Neb., Lincoln and Hastings; Billings, Mont. Within the next year or two service will be expanded to include all terminal areas on Burlington lines. Traffic will be interchanged with other roads soon.

COST OF TERMINALS—Standard dock and ramp, \$4,000.

EQUIPMENT IN SERVICE—

Flat cars: 29 converted, length 45 ft. Conversion cost \$5,686 including tie-downs.

Trailers: 98 (owned by subsidiary trucking company). Lengths: 27 ft, 30 ft, 32 ft, and 33 ft.

EQUIPMENT ON ORDER—Flat cars: 80.

NUMBER OF TRAILERS HANDLED THIS YEAR—921 (to Oct. 31).

MOST TRAILERS MOVED IN ONE DAY—(incl. LCL)—10.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—Yale James, vice-president—operation, Burlington Truck Lines, Galesburg, Ill.

CHICAGO GREAT WESTERN

TYPE BUSINESS HANDLED—Trailers of common carrier truckers at per trailer charge.

Piggyback Today

SERVICE BEGUN—For motor carrier trailers: July 7, 1936.

TERMINAL AREAS SERVED—Chicago; St. Paul; Council Bluffs, Iowa; Des Moines; Kansas City.

EQUIPMENT IN SERVICE—Flat cars: 150, length 53 ft.

NUMBER OF TRAILERS HANDLED THIS YEAR: 10,374 (first 10 months).

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—G. R. Gregg, vice-pres.—traffic, Chicago.

CHICAGO, INDIANAPOLIS & LOUISVILLE

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck-competitive rates.

SERVICE TO BEGIN—For truckload freight: January 15, 1955.

TERMINAL AREAS SERVED—Chicago; Indianapolis; Louisville.

COST OF TERMINALS—About \$15,000.

EQUIPMENT IN SERVICE—

Flat cars: 10 converted (estimated), length 38 ft.

Trailers: Not available. Lengths will be 32-35 ft.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—F. W. Kuhn, vice-president—traffic, Chicago.

CHICAGO & EASTERN ILLINOIS

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload traffic at truck-competitive rates; Trailers of common carrier truckers at a per-trailer charge.

SERVICE BEGUN—LCL: 1952; For own truckload freight: 1954; Common carrier highway trailers: December 1949.

TERMINAL AREAS SERVED—Chicago, St. Louis, Evansville, Ind.

EQUIPMENT IN SERVICE—

Flat cars: 41 converted, lengths 58 and 54 ft. Costs not available.

Trailers: 16 leased, lengths 26, 28, 30 and 32 ft.

NUMBER TRAILERS HANDLED THIS YEAR (not including LCL)—1,998.

MOST TRAILERS MOVED IN ONE DAY—16 (mostly common carrier highway trailers).

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—G. H. Van Swearingen, assistant to president, Chicago.

CHICAGO & NORTH WESTERN

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—For own LCL: August 12, 1953; For truckload freight: March 1, 1954.

TERMINAL AREAS SERVED—Chicago, Green Bay, Wis., Milwaukee, Fox River Valley area, Omaha, Minneapolis-St. Paul.



More on next page



SPECIAL REPORT:

EQUIPMENT IN SERVICE—

Flat cars: 62 converted, length 53 ft 6 in. Costs not available.
Trailers: 125, leased, lengths 24 ft and 32 ft.

IN CHARGE OF SERVICE—J. E. Gardner, superintendent merchandise and highway operations, Chicago 6, Ill.



DELAWARE, LACKAWANNA & WESTERN

TYPE BUSINESS HANDLED—Rail-billed LCL, at rail rates; Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—LCL: June 16, 1954; For truckload freight: July 12, 1954.

TERMINAL AREAS SERVED—New York-Newark, N. J. metropolitan area west to Dover, N. J.; Chicago, via Nickel Plate or Wabash; St. Louis via Nickel Plate or Wabash; Detroit via Wabash; Buffalo, N. Y.; and beginning December 6 Syracuse, N. Y.; Oswego.

COST OF TERMINALS—\$5,600.

EQUIPMENT IN SERVICE—

Flat cars: 24 converted, length 40 ft. Conversion cost \$1,760 each.

Trailers: 24 leased units. Length: 26 ft 2 in.; 28 ft 1 in.; 30 ft 5 in.; 32 ft 8 in.; and 33 ft 8 in.

EQUIPMENT ON ORDER—

Flat cars: 12.

Trailers: Leased as needed.

NUMBER TRAILERS HANDLED THIS YEAR (not including LCL)—162 (to November 19).

MOST TRAILERS MOVED IN ONE DAY (not including LCL)—10.

TRAINS HANDLING TRAFFIC—Special train No. 20, Buffalo-Hoboken. Leaves 5 p.m., arriving 5 a.m. Other traffic handled in regular merchandise trains.

IN CHARGE OF SERVICE—J. L. Barngrove, Jr., general traffic manager, 140 Cedar st., New York 6, N. Y.



ERIE

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—For truckload freight: July 12, 1954.

TERMINAL AREAS SERVED—Metropolitan New York and New Jersey; Chicago.

COST OF TERMINALS—\$6,044.

EQUIPMENT IN SERVICE—

Flat cars: 30 converted, length 54 ft 6 in. Conversion cost about \$1,225 each.

Trailers: 60 leased, length 32 ft.

EQUIPMENT ON ORDER—

Flat cars: 100 authorized, length 75 ft. Fifty of them ordered, cost approximately \$550,000.

NUMBER TRAILERS HANDLED THIS YEAR—50 (truckload only).

MOST TRAILERS MOVED IN ONE DAY—2.



Piggyback Today

TRAINS HANDLING TRAFFIC—Regular merchandise trains, providing second morning service between New York and Chicago.

IN CHARGE OF TRAFFIC—H. W. Von Willer, vice-president—traffic, Cleveland 15, Ohio.

GREAT NORTHERN

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—LCL: May 24, 1954; For truckload freight: September 10, 1954.

TERMINAL AREAS SERVED—St. Paul and Minneapolis; Duluth; Superior, Wis.; Fargo, N. D.

COST OF PROVIDING TERMINALS—\$1,700, for end-loading ramps.

EQUIPMENT IN SERVICE—

Flat cars: 8 converted, length 52 ft. Conversion cost \$2,000 each.

Trailers: 16 leased, length 24 ft. Rent for \$20 per week each.

EQUIPMENT ON ORDER: *Flat cars:* 17.

NUMBER TRAILERS HANDLED THIS YEAR (includes LCL)—781.

MOST TRAILERS MOVED IN ONE DAY (includes LCL)—10.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—C. O. Hooker, general manager—Lines East, Duluth, Minn.

KANSAS CITY SOUTHERN

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—September 10, 1954.

TERMINAL AREAS SERVED—Dallas, New Orleans and Shreveport.

EQUIPMENT IN SERVICE—

Flat cars: 10 converted, length 53 ft 6 in.

Trailers: 14 owned by subsidiary, lengths 28, 30 and 32 ft.

NUMBER TRAILERS HANDLED THIS YEAR—55 (no date).

MOST TRAILERS MOVED IN ONE DAY—4.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—J. P. Gunther, assistant general freight agent, Kansas City, Mo.

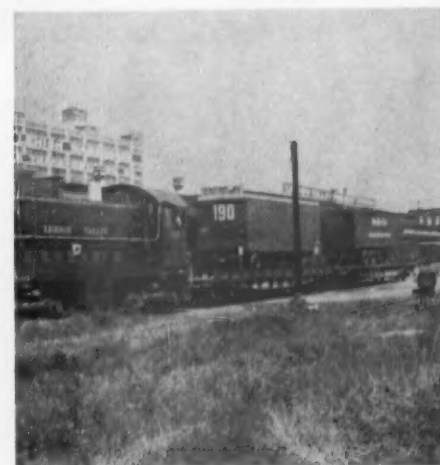
LEHIGH VALLEY

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—For trailer loads: July 12, 1954.

TERMINAL AREAS SERVED—New York metropolitan area; Chicago (via Nickel Plate or Wabash); St. Louis (via Nickel Plate or Wabash); Detroit (via Wabash); Cleveland (via Nickel Plate). Will be extended to include Buffalo.

COST OF TERMINALS—None reported.



More on next page



SPECIAL REPORT:



EQUIPMENT IN SERVICE—

Flat cars: 10 converted, length 53 ft 6 in. Conversion cost about \$1,000 each.

Trailers: Rented as required, lengths used are 30 and 32 ft.

NUMBER TRAILERS HANDLED THIS YEAR (not including LCL)—36.

MOST TRAILERS MOVED IN ONE DAY—3.

TRAINS HANDLING TRAFFIC—Special train FFW-1, overnight from Newark to Niagara Frontier; Special train BJ-2, overnight from Niagara Frontier to Newark.

IN CHARGE OF SERVICE—C. A. Kling, superintendent transportation, 143 Liberty st., New York.

MISSOURI-KANSAS-TEXAS

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed trailer loads at rail rates; Trailers of common carrier truckers at a per-trailer charge.

SERVICE BEGUN—All classes: July 6, 1954.

TERMINAL AREAS SERVED—Kansas City, Oklahoma City, Tulsa, Dallas. No immediate expansion plans.

COST OF TERMINALS—Approximately \$7,500 each.

EQUIPMENT IN SERVICE—

Flat cars: 40 converted, length 42 ft. Conversion cost about \$1,500 each.

Trailers: 5 leased.

NUMBER TRAILERS HANDLED THIS YEAR (truckload only)—371.

MOST TRAILERS MOVED IN ONE DAY—15.

TRAINS HANDLING TRAFFIC—Regular merchandise freight trains.

IN CHARGE OF SERVICE—T. F. Behler, vice-president, M-K-T Transportation Company, Kansas City, Mo.

NEW YORK, NEW HAVEN & HARTFORD

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Trailers of common carrier truckers, private carriers and freight forwarders at a per-trailer charge.

TERMINAL AREAS SERVED—New York; New Haven, Conn.; Springfield, Mass.; Boston; Providence, R. I. Expansion planned by early 1955 to Hartford, Conn., and New London; and Worcester, Mass.

COST OF PROVIDING TERMINALS—\$220,000.

EQUIPMENT IN SERVICE—

Flat cars: 400 specially built cars, length 40 ft. Cost \$8,000 each.

Trailers: None. Handle sizes up to 36 ft.

NUMBER TRAILERS HANDLED THIS YEAR (not including LCL)—43,952 (to October 31).

MOST TRAILERS MOVED IN ONE DAY (not including LCL)—337.

TRAINS HANDLING TRAFFIC—New York to Boston: Special trains HB-6 and HB-8; Boston to New York: Special trains BH-5 and BH-7. All trains on 5½ hr. schedules.

Piggyback Today

IN CHARGE OF SERVICE—E. V. Murphy, general freight traffic manager, South Station, Boston 10, Mass.

NICKEL PLATE

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck-competitive rates.

SERVICE BEGUN—For truckload freight: July 12, 1954.

TERMINAL AREAS SERVED—Chicago; Cleveland; Buffalo; New York (via DL&W and LV); St. Louis. *Expansion is planned between Chicago and Philadelphia and Baltimore (via P&WV, WM, Rdg.) beginning about January 1, 1955.*

COST OF TERMINALS—\$43,000.

EQUIPMENT IN SERVICE—

Flat cars: 30 converted, lengths 53 ft 6 in. (24) and 43 ft 9 in. (6). Conversion costs, \$2,000 each.

Trailers: 25 owned, length 32 ft. Cost \$4,000 each.

NUMBER TRAILERS HANDLED THIS YEAR (not including LCL)—174 (to November 9).

MOST TRAILERS MOVED IN ONE DAY—10.

TRAINS HANDLING TRAFFIC—CN-2, Chicago to New York, second morning. NCS-5, to Chicago, second morning.

IN CHARGE OF SERVICE—W. E. Erlenbach, general freight agent, Cleveland 1, Ohio.

NORTHERN PACIFIC

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckloads at truck-competitive rates.

SERVICE BEGUN—LCL: August 30, 1954; For truckload freight: October 27, 1954.

TERMINAL AREAS SERVED—Minneapolis-St. Paul; Fargo, N. D.; Duluth, Minn. *Service will be expanded to key points on NP in future.*

COST OF TERMINALS—None.

EQUIPMENT IN SERVICE—

Flat cars: 20 converted, length 53 ft. Conversion cost \$2,100 each.

Trailers: 20, owned by subsidiary. Lengths from 24 to 35 ft.

EQUIPMENT ON ORDER—Flat cars: 20.

NUMBER TRAILERS HANDLED THIS YEAR (includes LCL)—400.

MOST TRAILERS MOVED IN ONE DAY (includes LCL)—10.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

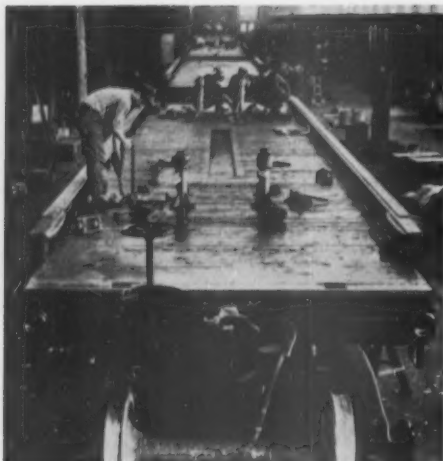
IN CHARGE OF SERVICE—C. R. Opsahl, general manager, Northern Pacific Transport Company, St. Paul 1, Minn.

PENNSYLVANIA

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload freight at truck-competitive rates; Trailers of common carrier truckers at a per-trailer charge (planned).



More on next page



SPECIAL REPORT:

SERVICE BEGUN—LCL: July 12, 1954; For truckload freight: July 12, 1954; Trailers of motor common carriers: To begin about January 1, 1955.

TERMINAL AREAS SERVED—New York-Newark metropolitan area; Philadelphia; Pittsburgh; Wheeling, W. Va.,-Steubenville area; St. Louis-East St. Louis; Chicago.

COST OF TERMINALS—Approximately \$82,000, reported to ICC in September.

EQUIPMENT IN SERVICE—

Flat cars: 90 converted, length 49 ft 3 in. Conversion cost reported to ICC \$984 each.

Trailers: 150. Other information not available.

EQUIPMENT ON ORDER—

Flat cars: 200 new, length 75 ft. Cost said to be more than \$10,000 each.

NUMBER TRAILERS HANDLED THIS YEAR—29 in July; 62 in August; 159 in September; 248 in October.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

READING

TYPE BUSINESS HANDLED—Rail-billed truckload freight at truck rates.

SERVICE TO BEGIN—For truckload freight—January 1, 1955.

TERMINAL AREAS SERVED—Philadelphia-Camden, N. J.; Chicago. Traffic will move via Western Maryland, Pittsburgh & West Virginia and Nickel Plate.

COST OF PROVIDING TERMINALS—None.

EQUIPMENT IN SERVICE—

Flat cars: 13 converted, length 47 ft. Conversion cost \$1,200 each.

Trailers: 17, owned by railroad. Length 32 ft. Cost \$4,215 each.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—A. N. Jewell, general mgr., Reading, Pa.

SOUTHERN PACIFIC (Including T&NO)

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload at truck-competitive rates; Freight moving in trailers of highway subsidiary, at truck rates (in T&NO territory only).

SERVICE BEGUN—LCL: May 1953, on both Pacific and Texas and Louisiana lines; For truckload freight: July 20, 1953, on Pacific lines only.

TERMINAL AREAS SERVED—San Francisco-Oakland area; Los Angeles area; between the San Francisco Bay area and points in Nevada, Utah, Idaho, eastern Oregon and western Wyoming; Los Angeles and Phoenix, Ariz. Service to be expanded into Pacific Northwest soon. On the T&NO, terminals served are Houston; Beaumont, Gregory; Dallas; Fort Worth; New Orleans; Lake Charles; Lafayette.

EQUIPMENT IN SERVICE—

Flat cars: 175 converted, 117 of which are 53 ft 6 in. long and 58 are 40 ft. Conversion cost \$1,300-1,700 each.

Piggyback Today

Trailers: 480 rail-owned, lengths 22, 24, 30, 32 and 35 ft. Costs range from \$4,200-\$8,700, depending on size and whether or not insulated.

NUMBER TRAILERS HANDLED THIS YEAR—(LCL) 10,500 (to November 9); on truckload rates (Pacific Lines only) 5,883 (to November 9).

MOST TRAILERS MOVED IN ONE DAY—66 (trailer loads). Including LCL the average is more than 100 per day.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—Pacific Lines—P. M. Chaimov, manager freight protection, merchandise and station service, San Francisco. T&NO—S. H. Milby, manager freight protection, merchandise and station service, Houston, Tex.

UNION PACIFIC

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckloads at truck-competitive rates.

SERVICE BEGUN—LCL: August 1953; For truckload freight: Not available.

TERMINAL AREAS SERVED—Los Angeles; Las Vegas, Nev.; at least 175 points in southern Idaho, Nevada, eastern Oregon and western Wyoming, (between these points and stations in Utah, as well as Los Angeles). Some traffic is being interchanged by the UP and SP. Eventually, UP expects to make its rail-trailer service systemwide.

EQUIPMENT IN SERVICE—

Flat cars: 120.

Trailers: 154.

WABASH

TYPE BUSINESS HANDLED—Rail-billed LCL at rail rates; Rail-billed truckload freight at truck rates.

SERVICE BEGUN—LCL: July 23, 1954 (experimental); For truckload freight: July 23, 1954.

TERMINAL AREAS SERVED—New York (via DL&W and LV); Detroit; St. Louis; Chicago. Service will be expanded to Kansas City, Mo., about Dec. 20, 1954.

COST OF TERMINALS—\$24,745.

EQUIPMENT IN SERVICE—

Flat cars: 9 converted, length 53 ft. Conversion cost \$1,830 each.
Trailers: 30, leased, lengths 32 ft (tandem) and 24 ft (tandem and single axle.)

EQUIPMENT ON ORDER—

Flat cars: 15 being converted.

NUMBER TRAILERS HANDLED THIS YEAR (not including LCL)—185 (to November 12).

MOST TRAILERS MOVED IN ONE DAY (not including LCL)—10.

TRAINS HANDLING TRAFFIC—Regular merchandise trains.

IN CHARGE OF SERVICE—A. W. Richardson, freight traffic manager, St. Louis 1, Mo.





1 SPIKES were pulled from groups of five ties by a hydraulic spike puller.



2 OLD TIES were removed with aid of Nordberg "Gandy." Note height of deck above river.

OUTPUT UP 43 PER CENT . . .

How Machines Speed Bridge Work

In replacing decks of double-track spans the Northern Pacific boosted production of an eight-man gang through use of several mechanized units, including a tie-renewal machine

That power machines may be used to advantage in bridge work was demonstrated recently when the timber decks on two open-deck spans at the Twin Cities were removed and replaced with new material. It is estimated that the overall output of the eight-man gang doing the work was increased about 33 per cent by the addition of several power units, notably a tie-renewal machine, but also including a hydraulic spike puller and a pneumatic chipping hammer. In fact, the output when renewing ties jumped about 43 per cent as compared with the road's previous experience.

This project involved Bridge No. 9 of the Northern Pacific, a double-track deck structure 952 ft long, on the road's "A" line between St. Paul and Minneapolis. This line is operated in freight service only and carries traffic of the owner railroad, the Minneapolis & St. Louis and the Chicago Great Western between these cities. The bridge consists of an 80-ft and an 85-ft ballast-deck approach span at the east end; two 247-ft deck-truss spans, with open decks, over the river; and three 90-ft ballast-deck plate-girder approach spans at the west end.

What Work Was Done

In the replacement project all ties and other deck timbers on both tracks of the two river spans were renewed. The new decks consist of 782 ties 12 ft long, except that every fourth tie is 16 ft long to provide supports for walkways between and outside the tracks, which were

also renewed. The outside walkways are each protected by a pipe handrail which was removed from the old deck and reinstalled. The inside guardrails of 100-lb scrap rail replace lighter guardrails.

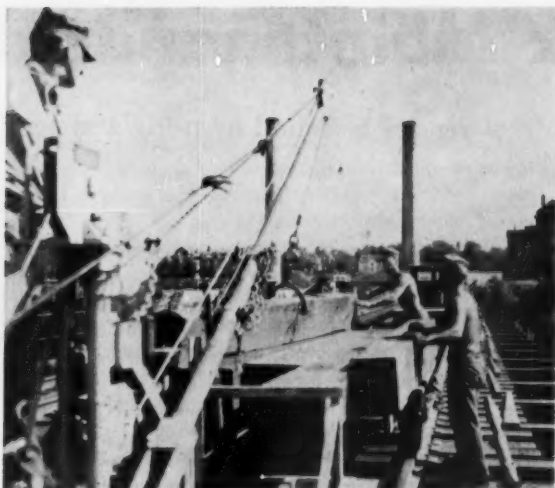
All of the new timber deck material was creosoted and preframed in the Northern Pacific's treating plant at Brainard, Minn. The ties and guard timbers were pre-bored for the hook bolts and guardrail bolts. The timber guards and ties were field bored where boat spikes were to be installed for the spacing of intermediate ties.

The work of renewing the deck was carried out entirely under traffic, using a crew of eight men and a bridge foreman. The tracks were available for work about six hours a day.

How Work Was Carried Out

Since there was no place available for the storage of bridge material at the immediate site, it was unloaded about a mile east of the bridge and moved to the work by two Fairmont A-5 motor cars each hauling a heavy-duty push car. A Nordberg "Gandy," used to load and unload the push cars, was later employed in the deck-renewal work.

One track was redecked at a time. The inside guardrails, the handrails, and the walk and guard timbers were first removed with the aid of the Gandy which handled all of the heavy material. A Nordberg hydraulic spike puller was then used to pull the spikes in groups of five



3 TIES REMOVED were loaded on push car for disposal. Long ties in deck support walkway.



4 TOPS OF STRINGERS were chipped clean of rust and scale by a pneumatic scaling tool.

ties each and the rails over these ties were jacked up approximately 4 in. and blocked on a single tie. The tie plates were then removed and stacked on a floorbeam.

The Gandy was then used to remove the loosened ties and to load them on a push car placed on the track close to the crane. The top flanges of the stringers were then swept clean and the light scale was removed with a hand chipping hammer. Next, the top surfaces of the stringers were chipped clean with a scaling tool operated from an Ingersoll-Rand "Spot-Air" compressor.

The new ties were next placed in position on the stringers by the Gandy which lifted them from a push car on which they had been brought to the site. These ties were temporarily bunched longitudinally to permit application of a bridge cement to the tops of the stringers to prevent corrosion of the metal. The bridge cement was poured on the stringer tops and spread with a broom.

The ties were then spaced, the plates were applied on a seal coat of the bridge cement, and the rail was lowered and hand spiked to position. Hook bolts were installed in every third tie and tightened with an impact wrench, and the timber guards were installed. The inside guardrail, walkways and handrailing were replaced on each track after the other deck-renewal work had been completed.

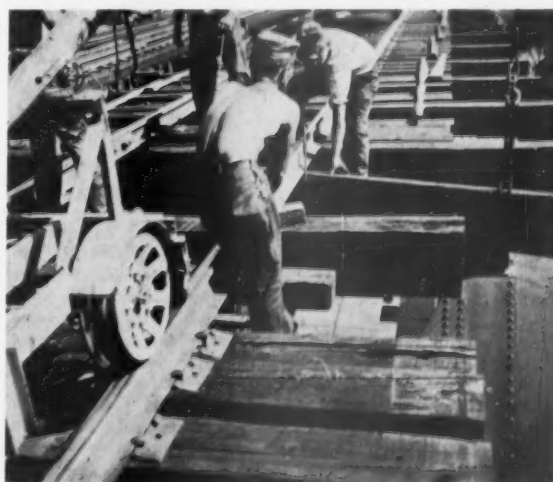
Machines Save 20 Days

From previous experience on similar work employing a gang of equal size using the equipment then available, which included a hand-operated derrick for handling the ties and timbers, it was originally estimated that it would require about 80 days to complete the work. Actually the job was finished in about 60 working days. During this period, exclusive of the time spent in overall preparatory and finishing work, the gang installed an average of 20 ties per day. It was stated that, without the use of the Gandy, the average daily replacement rate would have been 14 ties.

The project was carried out under the general direction of W. R. Bjorklund, district engineer, and under the direct supervision of C. W. Coil, division superintendent, and A. B. Riley, supervisor of bridges and buildings.



5 NEW TIE picked off push car by Gandy which will then swing around and insert tie . . .



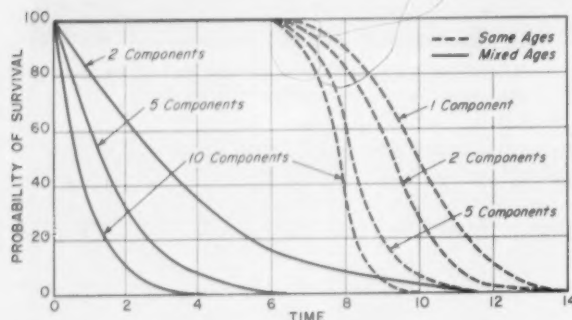
6 . . . IN POSITION on stringers. Bridge cement was applied to stringer tops before ties were spaced.

Can Rolling Stock Maintenance Be

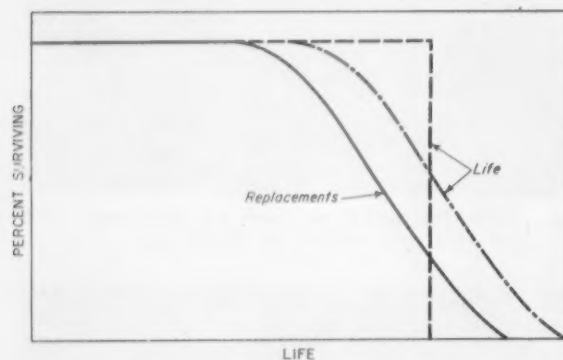
Could a more economical frequency of repairs be found by using a system of curves and formulas?

While plans for when and how much maintenance to give to rolling stock must necessarily involve human judgment, scientific analysis of this question can aid management by providing a description of the factors involved and their implications.

There are three types of failure for any type of equipment—wear-out, chance and initial failure—whether the



HOW THE PROBABILITY of survival of complex equipment decreases as the number of components increases.



WHERE REPLACEMENT PROGRAMS CAN GO WRONG

Because life curves of a piece of equipment are often not available, replacement curves are used instead to determine costs and desirable frequency of different types of repairs and maintenance. This practice could lead to erroneous conclusions if the replacement curve is not similar to what the life curve would be if data were available to develop it. In fact the replacement program itself may be basically wrong if the replacement curve does not have a form similar to the life curve. In the example above, if the life curve followed the dot-dash (sloping) line, the replacement program would be basically correct. The same replacement program would be ridiculous, however, if the life curve turned out to be like the broken line (in practice this vertical line would represent an item in service in which every unit had exactly the same life span as every other unit).

equipment is simple like a brake shoe or complex like a freight car, where the failure of a major component corresponds to failure of the car. Maintenance of equipment can forestall only normal wear-out failure; there is no relationship between maintenance and either chance or initial failure.

The life of an article—that is the ultimate service that can be extracted from it before it fails—is seldom known for railroad equipment because it is withdrawn from service before its life is ended by failure on the job. For that reason the replacement curve must be used, and this may or may not be similar to the life curve. If the two are not similar, the maintenance program becomes ridiculous—as one of the curves shows.

To avoid in-service failure and to obtain safely the longest possible service from a piece of equipment, periodic inspection is needed to ascertain the rate of wear. As inspections are needed more frequently as the equipment gets older and approaches the end of its expected life, the problem becomes one of balancing the advantages of longer service against the increasing cost of inspection and the possibility of in-service failure.

Can Hot Box Costs Be Reduced?

The process of determining the optimum mileage between inspections to keep hot box costs to a minimum can serve as an example of balancing inspection cost against service failures. It is assumed for illustration that (1) the approximate average total cost of a hot box, including labor, train delays, etc., is \$125 when it occurs in service, but only \$46 when it is found and corrected in a yard; (2) inspection is made every 100 miles; (3) car-miles per in-service hot box is 100,000; and (4) 2.5 times as many hot boxes are caught during inspection as occur in service.

Simple computation will show that the repair cost under these assumptions is 24 cents per 100 car-miles. If to this is added 48 cents to represent the cost of inspecting each car in the yard and oiling the journals, the total cost of inspection plus repair is 72 cents per 100 car-miles.

Now, if inspection is made every 200 miles, or half as often, the inspection cost per 100 car-miles likewise drops to half, or 24 cents. On the other hand the lowered inspection standards will probably result in a somewhat higher hot box frequency. While data on this point are not currently available, it may be assumed for illustration that the number of car miles per in-service hot box drops to 70,000 and that only 2.0 times as many hot

This article is based on a paper and its discussion at a recent meeting of the American Society of Mechanical Engineers. The paper was prepared by Roger R. Crane and Frank R. Brown of Operations Research, Melpar, Inc., a subsidiary of Westinghouse Air Brake Company. Comment was by W. M. Keller of the AAR, D. C. Turnbull, Jr., of the B&O, K. A. Browne of the C&O and P. V. Garin of the SP.

Mathematically Programmed?

boxes are caught during inspection as occur in-service. Expected repair cost with inspection at 200-mile intervals would increase to 31 cents per 100 car-miles, but the *total* cost of inspection plus repair would decline to 55 cents, or 17 cents cheaper than the practice of inspecting every 100 miles.

If sufficient data were obtained, showing the increasing cost of hot boxes as inspections are spaced farther and farther apart, it would be possible to determine the interval between inspection stops which would result in the most economical operation.

What Complexity Does to Reliability

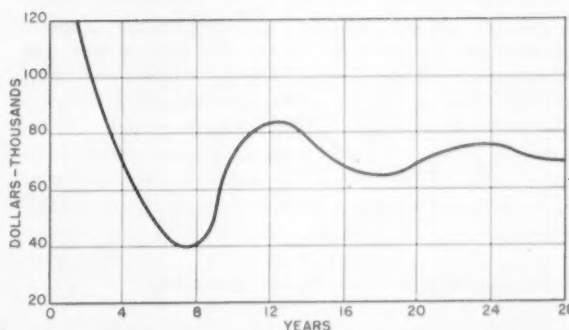
With complex equipment in which failure of any one component brings about failure of the system, the reliability (defined as the probability that the system will survive for a time) decreases rapidly as the complexity of the system increases. If, for example, the probability is 50 per cent that one wheel on a freight car truck will last for 10 years, then the probability that all four wheels on the truck will last for ten years is only about 6 per cent. Along with the decrease in reliability goes a decrease in the uncertainty or the amount of variation in the possible lifetime. For example, with a large number of parts, a time can be found at which a system would be virtually certain to fail.

Replace Parts Singly or in Groups?

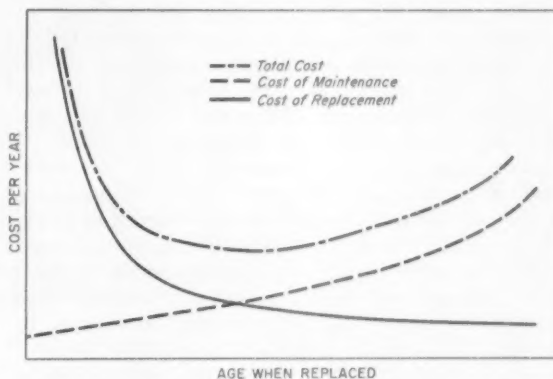
If each part is replaced as it fails, the equipment eventually reaches a steady state, and new components are thereafter added at an essentially uniform average rate. The probability of a failure of the system becomes constant with time. The mean life of the system remains sharply dependent upon the number of components and it is shorter than where all the components started new. This is illustrated by the graph for the survival probability for complex equipment.

The same graph can show that sometimes it is more economical to replace components as they fail up to a certain time and then replace the entire system. An illustration could be the full set of wheels and axles for a freight car, making the following assumptions: (1) that the life curve of an axle plus its two steel wheels is the form of the one-component curve; (2) that the cost of replacing an axle and two wheels, when all four axles are replaced simultaneously, is \$70; and (3) that when each axle and pair of wheels is replaced individually, the cost is \$85, plus a penalty of \$100 for making the replacement on a train in service.

Under these conditions the cost per year to make complete replacement after different numbers of years is shown in a following curve. This cost includes the replacement, on an individual basis, of any wheels which fail before the time shown. Under the prescribed conditions, the most economical time for replacing all wheels on a car is $7\frac{1}{2}$ years. It is also apparent from the rather steep rise of the curve on either side of $7\frac{1}{2}$ years that a small change in timing has a large effect on cost.



THIS WIERD-LOOKING CURVE of wheel replacement costs has one striking characteristic—a small error will result in a large increase in cost because of the sharp slope of the curve on either side of the $7\frac{1}{2}$ -year point at which wheel replacement cost is a minimum for the given circumstances.



GRAPHIC solution to determine the most economical age for replacing an item of equipment.

If the penalty attached to the individual replacement is decreased, the minimum of the cost curve will occur later, and for a low enough value of individual replacements, it may be actually more economical always to replace units individually as they wear out.

The preceding examples are relatively simple in that all the components of a system have the same life curve. In practice this usually will not be the case. For example, the life of the entire hopper car depends upon the lives of various components, some long and some relatively short. The car may become unserviceable (i.e. fail) if the journals fail or a wheel is fractured or if the sides become so corroded that they cannot retain the cargo. Each of these components has its own life curve, each different from the others. This situation is more complicated than the preceding cases but is still amenable to analysis.

Prospects for the Future

Complications can, of course, be foreseen in adapting this mathematical approach to finding the optimum repair period for railroad equipment. All cars are made up of certain basic parts, but these parts vary in type—such as rubber-mat and steel-spring draft gears, cast iron

and steel wheels. Possible combinations of different type parts would be almost infinite, and every combination would have some effect on what would be the most economical period between repairs.

To determine the extent to which maintenance might be reduced without seriously increasing failures it would be necessary actually to reduce the maintenance and keep a record of the failures. The procedure would have a large time lag and it would require extensive checking and record keeping. If the assumed reduction in repairs turns out to be false, simultaneously shopping an entire series of cars would be expensive and could very likely cause a shortage of the type of equipment involved.

Consequences of Failures Far-Reaching

Rolling stock also poses critical maintenance problems since equipment failures affect not only the cost of restoring the part to its original condition, but also involve the failed part's relation to damage, hazard to other equipment schedule delays, shipper and passenger dissatisfaction and a large group of other factors. Thus a failed axle or rail may completely disrupt the entire operation of a railroad and necessitate rerouting trains, resulting in an expenditure of many thousands of dollars, while the replacement cost of the failed part is perhaps a hundred dollars or less. While this is true of much machinery it is peculiarly true of railroad equipment.

There would also arise the question of how applicable the findings of one railroad would be to the conditions of another, and just how many years back data could and should go to be meaningful in setting up a program for this or a future year. Voluminous data would of course have to be gathered in order that detailed curves could be developed to supplant the generalized curves used as examples. With such data life curves could be prepared to set up repair programs for railroad rolling stock in much the same way that life insurance curves set rates for policies.

The many factors involved would add complications to the problem but should not be a barrier to the use of the system. It might possibly start on a small scale on a trial basis for equipment such as diesel parts, on which many data on life are already available. A byproduct of the system, if successful, would be a reduction in inventory. Theoretically inventory could approach zero as the forecast approached 100 per cent accuracy.

Much Work Yet to be Done

There is much yet to be done of a theoretical nature on this problem. The most difficult part will be to collect the actual operating data on the failure of rolling stock parts, to analyze these data, and to be sure that the results form a sound basis for proper maintenance planning.

Present studies offer hope that such analyses may contribute to the solution of the problem. In the final analysis, however, the real problem will not be the determination of ways to handle the many complications involved; it will be the usual question associated with any new idea—whether it be a new piece of equipment or a new system. Will the savings justify the cost of putting the idea into practice?

Benchmarks and Yardsticks

THERE WAS HELD RECENTLY a major civic event in which a large number of railroad people and non-railroad civic leaders participated. After the affair was over, the man in charge of arrangements wrote personal letters to all participants—not just a circular letter, but an individual letter in each instance. To these letters, he received acknowledgements from 85 per cent of the non-railroad participants and from 3 per cent of the railroad men.

The sharp difference in the degree of response by railroad people, as compared with that of the non-railroaders, has raised some questions in the mind of the writer of the letters. For example:

Isn't it, maybe, not the big spectacular things the railroads need to provide for, in order to improve their public relations—but rather a lot of little things: Prompt and invariable “thank you” letters for all favors; a “clincher” letter to every person one meets, to make sure that a casual friendly contact becomes permanent?

Such questions, probably, carry the key to all successful public relations effort. Two of the most noteworthy careers in this field that your reporter has observed at close range have this common characteristic: They constantly make new friends and seldom lose old ones, by the simple device of constantly remembering all their friends at all times.

Customary behavior, by less successful operators in the area of human relationships, usually consists in heaping attention on people when their jobs make them important—but neglecting them prior to their assumption of importance, and after they lose it.

Such self-serving conduct, otherwise known as “cupboard love,” does not fool many people. The individual who couldn't get the time of day from a lot of his acquaintances before top billing came his way is not usually deceived by the sudden access of new friends after he becomes a big shot. He knows that most of these new-found friends would vanish as quickly as they came, if his ascendancy should suffer an eclipse.

Effective relationships with people cannot be established on a basis of calculated parsimony—doling out thoughtfulness of others only when and where it is selfishly advantageous. This is one area where prodigality is wisdom and frugality is foolishness.

It is easier for most of us to see the value of thoughtfulness and courtesy in the abstract than to practice it in the concrete. That is why starting out with the little things and making them a habit is so important. When the little things are attended to consciously, the big ones are apt to follow of themselves.

J.G.L.

Remington Rand

BETTER BUSINESS METHODS

For Greater Profits
Through Lower Costs



New Accounting Method Jumps Hourly Paycheck Production

It's not hard to visualize big savings in clerical time, machine time and stationery costs on payroll if you could: 1) eliminate duplication of work on payroll worksheets; 2) eliminate posting of rates; 3) cut form handling in half; 4) slash check costs up to 80%; 5) level peak loads. That's just what you can do—and more!

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The new Rotoflo prepares photocopies of records up to 14" wide, and of any length. When used with a Transcopy Processor, it will give you a positive print in less than a minute. And it's the most economical transfer copying equipment you can buy! Get complete details by circling P385 on the coupon.

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RR-12

== Piggyback Equipment Section ==



Complete System for T-O-F-C Service

A company has been formed in this country to introduce to North American railroads a complete system for handling trailers on flat cars. The system includes: (1) flat cars and trailers especially equipped so end-loading and tie-down, according to the designer, require less than two minutes for two men, including the tractor operator; (2) light-weight flat car construction; and (3) a securing system

which keeps the trailer on the flat car and is said to all but eliminate damage due to shocks.

The system was originally worked out in France. Rails on flat cars and auxiliary wheels outside the trailer's regular wheels are said to be the secret of the fast loading. This fast loading, plus a simple securing device, made it possible for eight securers and eight tractor drivers at one terminal

in France to load and secure on eight strings of flats 120 trailers in 20 minutes. Further refinements of this system to be announced soon will, it is reported, reduce the weight of flat cars for use in T-O-F-C operations; make it possible for any Class I railroad to handle today's trailers on flats with no clearance worries; and make tie-down of trailers even easier and less expensive than present procedures used with this system. *Piggy-Back, Inc., 20 Exchange Place, New York 5 •*



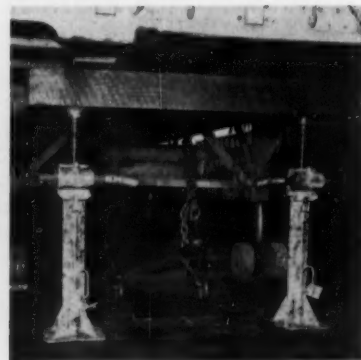
Brandon "Yardmobile"

The Yardmobile has been designed specifically for end-loading trailers on flat cars. It has four-wheel steering and dual controls which enable the operator to face in the direction in which the unit is moving and steer the wheels leading in the direction of

movement. Special low-speed gearing combined with torque converter drive also provide desirable characteristics for this operation. A hydraulic lift at the fifth wheel eliminates the necessity for cranking landing gear wheels up and down.

The ramp up which the tractor is moving is the Brandon "Traileramp,"

made of magnesium, and designed to attach to the coupler of any standard flat car equipped with underslung uncoupling lever. The ramp can be positioned manually or can be moved from place to place by a small tractor. *Brandon Equipment Company, 332 South Michigan Ave., Chicago 4 •*



These jacks are specially designed for piggyback service. Two jacks are used at both the front and rear of the trailer to take the weight of the trailer off its springs. *Duff-Norton Manufacturing Company, Pittsburgh 30 •*

(More on page 78)

HOLLAND

Long-Travel

unit snubber spring



THE Holland STYLE E-2 Volute Snubber Spring has 2½" travel and gives ample protection to lading and car structures when used with A.A.R. 2½" long-travel coil springs.

The Holland STYLE E-2 Volute Snubber Spring is applied in old conventional A.A.R. or self-aligning trucks along with new coil springs (2½" travel) to improve riding quality as shown by tests conducted by A.A.R. during 1948-50.

Write for Bulletin #15 describing in detail the Unit Snubber.

HOLLAND COMPANY

332 South Michigan Avenue • Chicago 4, Illinois

Operations

(Continued from page 15)

tiring president of the society and honorary vice-chairman of the New York Air Brake Company, who expressed optimism about a probable growth factor in railroading. Basing his prediction on population growth and on continued improvement of living standards, he said:

"We can reasonably assume a period of fairly steady growth for the next two decades; the nation will probably have 30% more people than now, with industry producing about 80% more goods. The standard of living in 1975 would thus naturally be considerably higher than today. The implication is that American industry and transportation is to continue to develop labor-saving devices and to install improved equipment and that the country will be busy and productive."

Atomic Secrecy—In his attack on undue secrecy about atomic energy, Mr. Perlman found it unfortunate that the first use of that energy was in destruction, because it conditioned the country to illogical attitudes. If the military were to regard electricity as it does atomic energy, it would say to industry: "We use electricity in warfare; therefore you can't be told anything about it or use it in commercial life."

The Central president recalled that earlier this year he and two other railroaders approached a high government official with an idea for a mobile unit utilizing atomic power. The official could find no basic fault with the idea, but one of his colleagues was shocked that the group was in possession of what he termed "highly secret information." He demanded to know where they got it. The answer: A public pamphlet bought from British Information Service for two shillings.

Mr. Perlman also reviewed the now well-known experiments with lubricating oils initiated by the Denver & Rio Grande Western, of which he formerly was an officer. He reported that the attitude of that road toward the subject is finding favor elsewhere, but admitted that proponents still "catch a lot of hell from unbelievers."

Awards—The Railroad Division was, especially recognized this year by two society awards. The Melville prize medal for original work was given to Edmund Q. Sylvester, president of the Griffin Wheel Company, for his paper "Pressure Pouring Steel Car Wheels in Permanent Molds," which was presented at the last annual meeting of the society. Frank K. Mitchell, member of the Railroad Division executive committee and assistant vice-president of the NYC, was awarded a certificate as Fellow of the society for outstanding achievement in the field of railway mechanical engineering.

During the Railroad Division sessions, the following members of the executive committee were installed for the coming year: Chairman, C. K.

Steins, mechanical engineer, Pennsylvania; vice-chairman, A. G. Hoppe, mechanical engineer, Milwaukee; T. F. Perkinson, manager, Transportation Engineering Division, General Electric Company; Mr. Mitchell; and F. L. Murphy, assistant vice-president, sales, Pullman-Standard Car Manufacturing Company, Washington, D.C.

The following new members of the General Committee also were installed: H. L. Decker, acting mechanical engineer, Pennsylvania; Rosser Wilson, vice-president, engineering, American Brake Shoe Company; F. H. Einwaechter, chief of motive power and equipment, Baltimore & Ohio; Frank Fahland, general mechanical engineer, Union Pacific; C. E. Tack, manager product engineering, American Steel Foundries; E. H. Weston, chief mechanical engineer, Chicago & North Western; D. R. Meier, manager, Locomotive Engineering Section, General Electric Company; and H. V. Gill, superintendent of shops, Santa Fe, San Bernardino, Cal.

Labor & Wages

NWP Resumes Operations—Strike Issues Settled

Members of the Brotherhood of Locomotive Engineers have returned to their jobs on the Northwestern Pacific following settlement of the dispute over four wage demands for which they struck November 11 (*Railway Age*, November 22, page 34).

Freight service was restored December 6, but in view of the heavy backlog of cars to be moved, operation of the road's overnight passenger trains

was not able to be resumed until December 10.

Terms of the settlement were not initially disclosed. In a joint statement, G. L. Morrison, vice-president and general manager, and J. P. Colyar, general chairman of the BLE, expressed gratitude "for the understanding of shippers and businessmen whose transportation services had been temporarily disrupted." The settlement did not represent each other's full conception of issues involved, they said, adding that "it was agreed to in the interest of all concerned."

"Railroads Can No Longer Lead in Wage Picture"

"The time has now come when railway labor organizations cannot expect the railroad industry to continue to be a leader in granting demands for higher wages and fringe benefits," Howard Neitzert, counsel for the regional carriers conference committees, told a Presidential emergency board in Chicago on December 6.

Mr. Neitzert told the board, which is hearing demands of the Order of Railway Conductors & Brakemen for graduated pay based on weight of locomotives (*Railway Age*, November 29, page 8; November 15, page 9), that "without some improvement in current economic conditions, there is considerable doubt as to whether costs of pattern settlements can be borne by some segments of the industry without insolvency or serious injury to the corporate and financial structures involved."

He termed the present demands of the conductors' organization "completely unjustified" and a "thinly disguised wage demand" that would be "an inequity and an injustice to the



THIS RENEWAL PARTS WAREHOUSE was formally opened at 5000 South Major avenue, Chicago, by the American Locomotive Company in November. Some 100 railroad and business officers of the Chicago area were present when Norman C. Naylor,

a director of Alco, opened the center from the cab of a DL-600 locomotive which was later placed on display. The warehouse is located in the Clearing Industrial District, and has direct railroad service via the Gulf, Mobile & Ohio.

carriers and to the public that pays for the service through rates and fares." If amount and type of work performed were to be accepted as a criterion for fixing graduated rates of pay for train-service employees, he said, their basic rates would become smaller, rather than larger, as the weight of the locomotive hauling the train became greater. It is the short train pulled by a light locomotive, he asserted, that makes most stops enroute, does switching enroute, handles LCL freight and local express, and has the slow schedule. The skill, labor and responsibility of train crews is greater in such service than on long, fast, through trains making few stops, he stated.

Members of the board are: Chairman Edward M. Sharpe, chief justice, supreme court of Michigan; Charles A. Sprague, publisher of the Salem, Ore., Statesman; and John T. Dunlop, professor of economics, Harvard University.

"Non-Ops" Get Escalator Raises in Basic Pay Rates

Most of the railroads and unions representing their non-operating employees have signed agreements whereby so-called escalator clauses which call for cost-of-living adjustments have been eliminated from currently effective "non-op" wage agreements and the 13-cent escalator-clause increase obtained thus far has been incorporated into basic pay scales.

The agreement became effective December 3, thus forestalling an escalator-clause cut of one cent per hour which was indicated for January 1. Operating employees had previously ended their escalator clauses as part of wage settlements reached this year.

The "non-op" unions did not join this movement for direct wage increases. They pressed instead for the health and welfare program on which they have been negotiating with the carriers since an emergency board report was made in the case last May.

People in the News

Hammond Named TAA Executive Vice-President

Harold F. Hammond will become executive vice-president of the Transportation Association of America on January 15, 1955. He will be successor to the late Donald D. Conn.

This was announced last week by TAA's president, George P. Baker. Mr. Hammond has been for seven years manager of the Transportation and Communication Department of the Chamber of Commerce of the United States. When he joins TAA, he will

maintain offices in Washington with the association's first vice-president, Leif Gilstad, as well as in Chicago where TAA's general offices are located.

Metzman to Retire from Railway Car Institute

Gustav Metzman, president and chairman of the American Railway Car Institute for the past two years, has announced his resignation from both posts, effective December 31. Mr. Metzman, who retired in 1952 as president of the New York Central, will devote himself to private business interests and travel.

Hawthorne to Retire

Vaughn R. Hawthorne, executive vice-chairman of the Mechanical Division of the Association of American Railroads, will retire December 31, after more than 50 years in the railroad industry. Mr. Hawthorne, who entered railway service with the Pennsylvania in 1904, was honored at a December 3 luncheon at the Union League Club in Chicago. The luncheon, sponsored by a large group of midwestern sup-



Vaughn R. Hawthorne

ply men, also was attended by many representatives of the Mechanical Division and members of the Locomotive Maintenance Officers Association.

Mr. Hawthorne, 68, was first appointed acting secretary of the Master Car Builders and the American Railway Master Mechanics Associations in 1918. From 1919 to 1940 he was secretary of the Mechanical Division, and in 1941 was appointed to his present position as executive vice-chairman.

R. B. Murray Resigns From Commerce Transport Post

President Eisenhower has accepted the resignation of Robert B. Murray Jr. as Undersecretary of Commerce for Transportation effective January 20. Mr. Murray, who intends to re-

turn to private business, said in his letter of resignation that his term had already been "thrice extended."

He reported to the President that his office had become the focal point of Governmental responsibility in the transportation industry and that by January 1 all planned legislation for Congress, work for the Cabinet Committee on Transport Policy and a budget presentation will be complete.

He also stated that his office is "just now finishing a study of the railroad situation which has been made available to the Cabinet Committee."

President Eisenhower accepted the resignation "with reluctance" and commended Mr. Murray for directing "comprehensive studies of the government's role in transportation." He especially praised him for work on airport, shipbuilding and highway programs.

Before entering government service Mr. Murray was president for seven years of the Pennsylvania Economy League, Inc.

Traffic

RRs Need More Tonnage Now, Urges Small

"Where in my business can I turn more freight over to some good, established merchandise cars?" That is what the National Small Shipments Traffic Conference is urging its members to consider in routing traffic.

Established to protect interests of shippers of small-lot consignments, the conference, on November 1, set in motion a 90-day test, during which its members are expected to aid to the maximum extent in concentration of LCL tonnage for established merchandise cars originating at selected cities in Central territory; and railroads are being asked to operate the cars as scheduled, regardless of minimum tonnage; to move traffic expeditiously, and to report on performance (*Railway Age*, October 4, page 8).

Now the chairman of the conference's LCL Committee, R. J. Tyler, general traffic manager, Tube Turns, Inc., has circularized members urging full attention to the group's principle "to secure actual return of LCL merchandise traffic by conference members to the rail lines." Asserting that the conference is pledged to support the hundreds of merchandise cars involved in the test, Mr. Tyler writes:

"Much can be said about the quality of railroad service today. Many faults can be found, but your LCL Committee believes the quality is considerably better than most people believe it to be. Write to your committee chairman and tell him about your potential tonnage for the rails. Let him advise regarding specific car movements which will be of benefit to you. Let him have reports of your experience. A most important factor is that

you write to your LCL Committee and keep writing.

"We are helping in a fight for free enterprise and the survival of an industry which plays an important part in the maintenance of a strong national economy and with an industry newly aroused and ready to do its full part."

Pullman Tightens Up On "No Show" Refunds

The Pullman Company, on December 1, began applying more stringent rules on redemption of unused sleeping car tickets in territory east of Chicago and St. Louis and north of Cincinnati and Washington.

Under the revised rules, refunds will be made generally only when reserved space is released the day before departure. To accommodate passengers with a bonafide trip postponement less than 24 hours prior to departure, the new rules permit a "once-only" exchange of ticket on the day of departure, not less than one hour before train time, for another ticket good between the same or more distant points for use within seven days.

Object of the new rule is "to remedy the serious problem . . . of an unduly large volume of late or non-cancellations of tickets," according to J. J. Nolan, vice-president in charge of passenger traffic. The situation was creating much dissatisfaction and ill will on the part of patrons unable to secure sleeping car accommodations, and has caused a serious loss of revenue, he stated.

Financial

Alleghany Asks ICC to Approve Central Control

Alleghany Corporation, supplementing the pending application involving its interest in the New York Central, has called on the Interstate Commerce Commission to recognize its "continuing control" of the Central.

The request was in reply to a letter from Director Roger Boyden of the ICC Bureau of Finance who suggested that Alleghany specifically request authority to control the Central. The previous application proposed a merger involving the Louisville & Jeffersonville Bridge & Railway and the Cleveland, Cincinnati, Chicago & St. Louis (*Railway Age*, September 27, page 52). It proposed a "new type" of control of the bridge company by the Big Four which already owns all the L&JB stock, according to Edward K. Wheeler, Alleghany counsel.

Alleghany and the Central, the former meanwhile asking that its carrier status be maintained, joined in the merger application. Mr. Wheeler said that Alleghany's request was for



CHRISTMAS CHEER
APLENTY in these cans of Canadian National plum pudding! More than 3,500 cans, enough for 21,000 individual servings, were made under direction of Chef Instructor Romeo Charest to meet the needs of patrons in CNR dining cars during the holiday season.

authority to effect the merger "while continuing its control of the Central." An additional phrase in the supplement asks the commission for "such other authority as may be deemed requisite." Mr. Wheeler said that while the basic application is "absolutely sound and absolutely clear," this phrase asks the commission "to give us what you think we need."

The supplement also lists Alleghany's portfolio as follows: Rails, \$48,008,801 or 67.76%; Non-Rail, \$5,515,993 or 7.78%; Cash, \$313,761 or 0.44%; and Notes Receivable, \$17,016,541 or 24.02%; for a total of \$70,855,096.

Hudson & Manhattan.—*Reorganization.*—New York Federal Judge L. E. Walsh has ordered reorganization of the H&M under Chapter 10 of the Bankruptcy Act. Judge Walsh previously had denied the company's petition to have the reorganization conducted under Section 77 of the Act. The H&M, he contended, is not a railroad system, but an interurban electric railway.

Securities

Dividends Declared

ATCHISON, TOPEKA & SANTA FE.—common, \$1.25, quarterly, payable March 2 to holders of record January 28; extra, \$2, payable January 7 to holders of record December 10; 5% non-cumulative preferred, \$1.25, semiannual, payable February 1 to holders of record December 31.

CANADA SOUTHERN.—\$1.50, semiannual, payable January 1 to holders of record December 27.

MINNEAPOLIS & ST. LOUIS.—increased, 35¢, payable December 20 to holders of record December 10.

Security Price Averages

	Dec. 7	Prev. Week	Last Year
Average price of 20 representative railway stocks	81.94	78.52	59.20
Average price of 20 representative railway bonds	97.44	97.25	90.68

New Facilities

GN Opens New Diesel Shop at Spokane

A two-day civic celebration at Spokane, Wash., marked the opening of the Great Northern's new diesel locomotive shop in that city late last month. Festivities included a businessmen's luncheon, a formal dedication program, and an "open house" at which more than 14,000 visitors inspected the general shop area.

Known as Hillyard diesel shop, the new facility was reconstructed from the shell of a former steam locomotive shop as part of a \$675,000 modernization program. In place of steam locomotive pits are four service tracks, plus three tracks leading to a 16-ft pit containing a 100-ton drop table for locomotive truck replacement. A total of 40,000 sq ft of floor area have been renovated; new lunchroom, locker room and shower and toilet facilities provided; and an office set up for the assistant shop superintendent. Illumination is largely fluorescent.

Railway Officers

BURLINGTON. — **Ellis L. Simmons**, general agent—freight department at Chicago has been appointed general freight agent there, succeeding **William J. Lahr**, who retired December 1. Mr. Simmons' successor is **H. H. Moench**, who transfers from Minneapolis, and in turn has been replaced by **B. P. Hart**, general foreign freight agent at Chicago.

Carl W. Krohl, general attorney, has been appointed general solicitor at Chicago, succeeding **John L. Rice**, who has retired. **Richard T. Cubbage**, corporation counsel, has been named assistant general counsel at Chicago. **Andrew C. Scott**, assistant general solicitor, and **Russell B.**



BANGOR & AROOSTOOK.—Gay M. Bradbury, freight traffic manager, has been appointed assistant to vice-president—sales (traffic) at Bangor, Me.

James, commerce attorney, have been appointed general attorneys, while **James A. Gillen**, commerce attorney, has been advanced to general attorney and commerce counsel. **Raymond E. Skov**, attorney, becomes contract attorney.

CANADIAN NATIONAL.—**J. R. Brown**, assistant foreign freight agent has been appointed general freight agent at Vancouver, B.C., succeeding **W. A. Whyte**, who retires November 30 after 43 years' service.

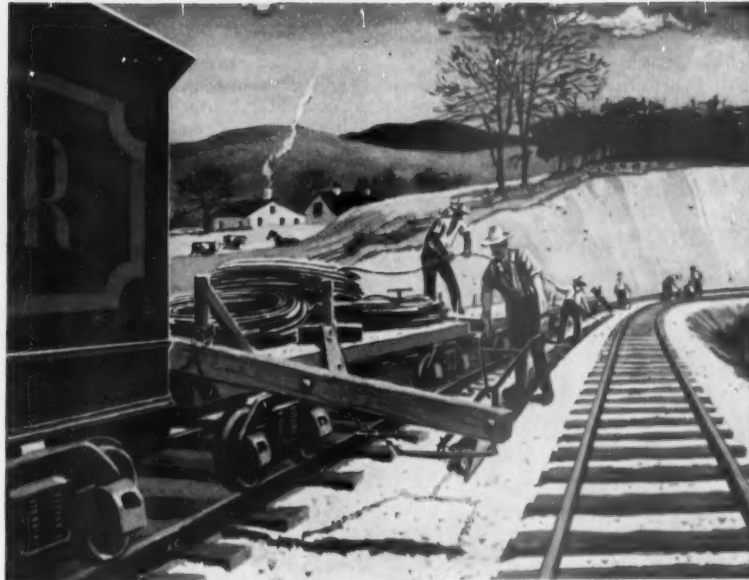
Harold H. Wilson, general freight agent at Buffalo, has been promoted to assistant freight traffic manager there, succeeding **Harry F. Rose**, who retired November 20. **Arthur M. Sharpe**, general agent, freight department, at Chicago, succeeds Mr. Wilson as general freight agent at Buffalo. **N. A. Landerman** has been named general agent, passenger traffic department, at Montreal, succeeding **J. P. Tanguay**, retired.

Capt. D. C. Wallace has been appointed marine superintendent of the CN (West Indies) Steamships and CNR marine services at Montreal, succeeding the late **Capt. D. McLeod**.

Marc Meunier, assistant superintendent of colonization and agriculture, has been appointed assistant manager of French services, public relations department.

H. M. Blaiklock, regional manager, real estate department, at Toronto, has been appointed assistant general manager of real estate at Montreal, succeeding the late **R. J. Minshall**.

CHESAPEAKE & OHIO.—**R. G. McGehee**, general superintendent, Eastern general division, at Clifton Forge, Va., has been appointed assistant to vice-president—operations, at Richmond, Va. **G. P. Gibbs**, general superintendent, Western general division, at Huntington, W. Va., has been named assistant general manager, Southern region, at Huntington. **P. G. Shepherd**, assistant general superintendent, Western general division, at



How a locomotive-drawn plow was used to lay the first underground cable

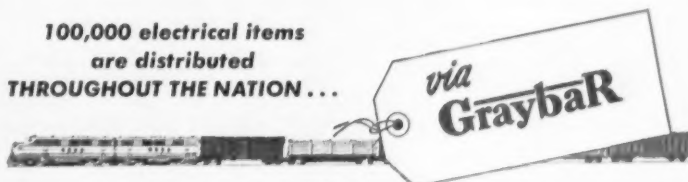
Back in 1882, engineers of the Boston and Providence Railroad in Massachusetts decided to experiment by laying a 21-conductor cable in the ground. Connecting a plow to an outrigger on a flat car, they coupled up a locomotive and plowed a five mile trench between Attleboro and West Mansfield. Inside a ¾" lead pipe they ran their gutta percha insulated cable . . . and it worked.

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Huntington, has been appointed assistant to general manager at Richmond. **W. F. Stone**, assistant to general superintendent, Western general division, at Huntington, has been named assistant to general manager there. **S. L. Barksdale**, inspector of transportation at Clifton Forge, has been appointed general inspector of trans-



R. G. McGehee

portation at that point. The former positions of all have been abolished.

R. B. Rhodes has been named general car service inspector at Clifton Forge.

W. M. Mountcastle, Jr., assistant general freight agent at Richmond, Va., has been appointed assistant freight traffic manager there, and has been



G. P. Gibbs

succeeded by **T. M. Tierney**. **R. L. Schilke** has been named district freight agent at Detroit, succeeding **S. F. Witt**, who has been promoted to assistant freight traffic manager at that point.

Joseph J. Anzalone, treasurer, retired December 1.

Ted Schoening, assistant to director of public relations at Cleveland, has joined the Philip Lesley Company, Chicago and New York Public relations firm, as an account executive at Chicago.

MINNEAPOLIS & ST. LOUIS.—**Larry S. Provo**, certified public ac-

countant, has been elected vice-president and comptroller at Minneapolis, succeeding **George A. Anderson**, who retired December 3, after 48 years of service. Mr. Provo is a graduate of



Larry S. Provo

the University of Minnesota. He joined Arthur Andersen & Co., a public accounting firm at Minneapolis in 1948 as assistant accountant, and was appointed a senior accountant in 1951, and a manager in 1952.

PENNSYLVANIA.—**W. Parker Stuart**, coal traffic manager (sales) at Philadelphia, has been appointed general coal traffic manager with system-wide jurisdiction. **A. Lynne Grayburn, Jr.**, coal freight agent, has been appointed coal traffic manager, Eastern region, with headquarters as before at Philadelphia, succeeding the late **C. H. Lippincott**. **Herman H. Lippold**, general coal freight agent, advances to the newly created position of coal traffic manager, Central region, with headquarters as before at Pittsburgh. **Martin E. Klein**, general coal freight agent at Chicago, has been appointed coal traffic manager there, also a new position. **R. W. Wilkins**, coal freight agent at Pittsburgh, has been transferred to Philadelphia, to succeed Mr. Grayburn. **J. B. Carey**, coal freight agent at Philadelphia, has been appointed coal and ore agent there.

SOUTHERN.—**Roland A. Davis**, New England freight agent, has been appointed general agent, freight and passenger departments, and **Roger Vaughan** has been named district passenger agent, both remaining at Boston. **Joseph J. Hubbard**, general agent, freight department, has been appointed general agent, freight and passenger departments, and **Harvey E. Schemm** has been named district passenger agent, both remaining at Baltimore.

C. L. Toney, assistant general passenger agent at Asheville, N.C., has been appointed general passenger agent at Charlotte, N.C., succeeding **C. F. Bigelow**, who retired November 1, after more than 51 years of service. **J. R. Ford** succeeds Mr. Toney as assistant general passenger agent at

Asheville and **E. B. Howes** succeeds **F. H. Boone** as division passenger agent at Chattanooga, Tenn.

Clyde E. Flowers, general freight agent (divisions), has been appointed assistant freight traffic manager, in charge of divisions, with headquarters remaining at Atlanta. **John S. Martin**, assistant general freight agent, has been named assistant freight traffic manager, having supervision over freight traffic statistics and analyses, and such other duties as may be assigned to him, with headquarters as before at Washington, D.C. **Jack D. Parr, Jr.**, succeeds Mr. Martin as assistant general freight agent at Washington. **Leo C. Seiner**, commercial agent at Chattanooga, has been appointed district freight agent there, succeeding the late **Eugene B. Hyden**.

K. Nottingham, assistant auditor of joint facilities, has been appointed auditor of joint facilities, with headquarters as before at Washington, succeeding **C. B. Carlton**, who retired November 1, after more than 38 years of service. **W. H. Pitt** succeeds Mr. Nottingham as assistant auditor of joint facilities.

Leason L. Waters, superintendent at Somerset, Ky., has been transferred to the Washington division at Alexandria, Va., succeeding **Henry R. Moore**, who replaces Mr. Waters at Somerset.

TOLEDO TERMINAL.—The position of secretary and general auditor has been abolished and **W. W. Kolhoff**, who formerly held that position, has been appointed general auditor at Toledo; **W. J. Polhemus** has been named secretary.

Raymond Dejaiffe has been appointed chief engineer and the position of engineer maintenance of way, formerly held by Mr. Dejaiffe, has been abolished.

OBITUARY

Paul H. Van Hoven, who retired as president of the **Duluth, Missabe & Iron Range** last spring, died at his home in Del Ray Beach, Fla., December 3, following a long illness. Details of Mr. Van Hoven's 43-year railroad career appeared in the June 22 *Railway Age*, page 36.

W. R. Minton, division superintendent of the **Great Northern** at Superior, Wis., died November 26.

Robert Thomson, 78, retired passenger traffic manager of the **Chicago & North Western**, died December 5 at Elgin, Ill.

O. Scott Tomkins, 73, retired signal engineer of the **Chicago & North Western**, died November 30 at Berwyn, Ill.

Louis Alfred Wood, superintendent of communications of the **Burlington** at Chicago, died December 2 at Berwyn, Ill.

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Anyone seeking a clear example of Fairmont leadership need look no further than the illustration above. It's the Fairmont Demountable Wheel—and though less dramatic in its use than many Fairmont products, it is a perfect representative of the qualities that have made Fairmont the most respected name in railway maintenance. First of all, it is typical in its origin. The demountable wheel is, in every

way, a Fairmont development. It was introduced to the railway world by Fairmont—and Fairmont has led in its subsequent refinement since that time. Secondly, it is typical in its quality—engineered and built to the highest standards it is possible to enforce on its manufacture, and rigidly inspected for excellence of construction. So soundly designed is it, in fact, that it has been adopted by the American

Railway Engineering Association as their standard for the industry. And thirdly, it is typical in its acceptance—for the Fairmont Demountable Wheel is the overwhelming choice of experienced railway men the world over. If you are currently considering the purchase of demountable wheels, you will, of course, want the finest available. And that—as you must surely know—means Fairmont!



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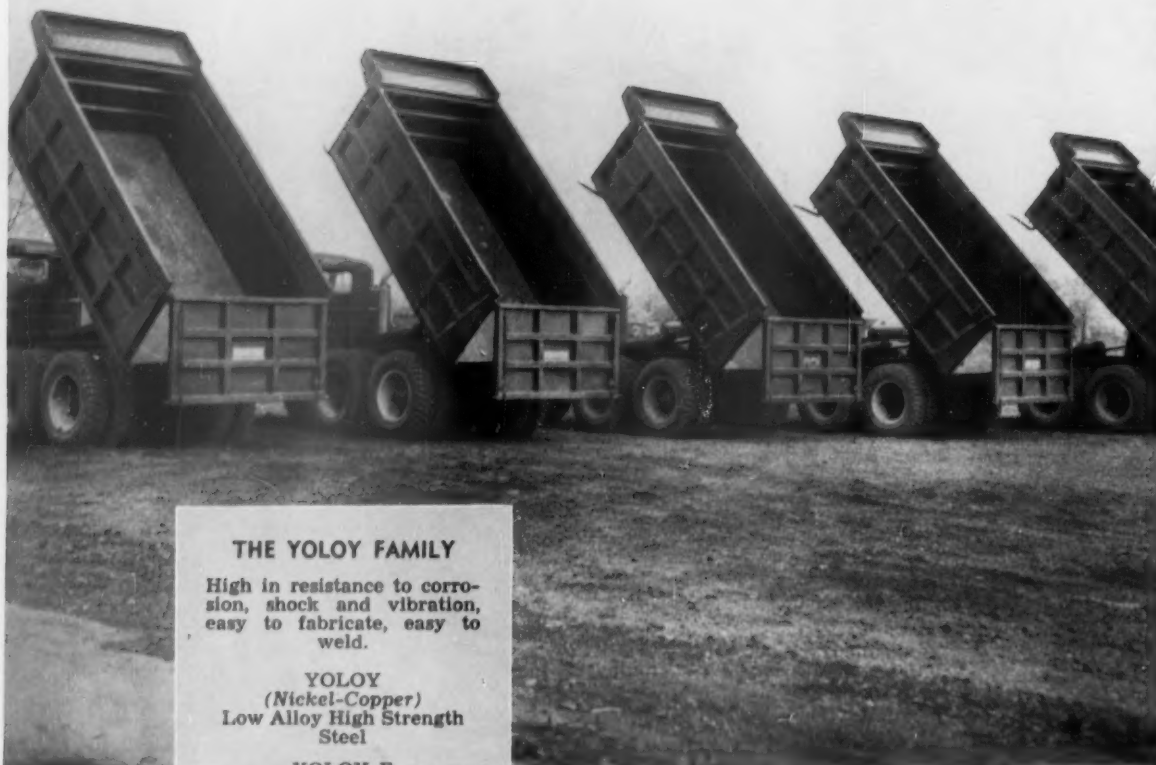


GANG CARS—For free descriptive literature on Fairmont Demountable Wheels, write for Demountable Wheel Bulletin #561, Heavy-Duty Wheel Bulletin #561-2, and Special Wheel Bulletin #561-3. Prompt reply.

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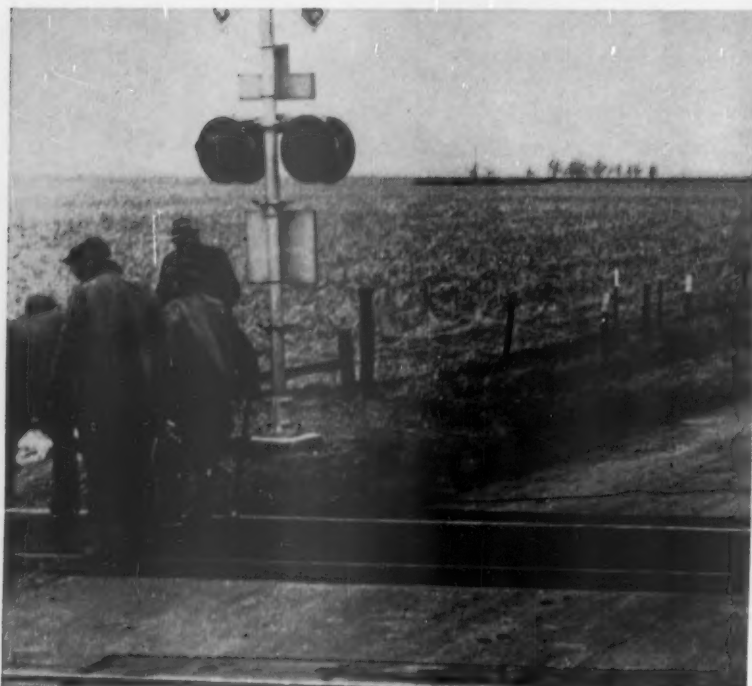
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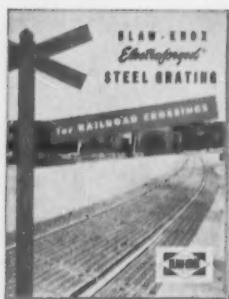
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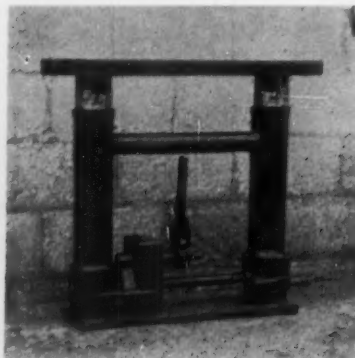
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Piggyback Equipment

(Continued from page 68)



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These dual wheel blocks have flange type securement of rear block to car deck and cam lock tying front and rear blocks together. They are available for either tandem or single axle trailers. *Brandon Equipment Company, 332 South Michigan Ave., Chicago 4 •*

Current Publications

PERIODICAL ARTICLE

WHERE ARE THE RAILROADS GOING?, by Thomas A. Kindre. *Steelways*, December 1954, pp. 1-4. American Iron & Steel Institute, 350 Fifth ave., New York 1. Free.

A brief look at what railroads have done to modernize their plant since World War II, and what the train-riding public and shippers can look forward to in the future.

BOOKS

TRANSPORTATION AND COMMUNICATIONS, by G. Lloyd Wilson. 757 pages. Appleton-Century-Crofts, Inc., 35 West 32nd st., New York 1. \$6.

This volume is designed as a gen-
(Continued on page 84)

Sure, there is a Santa Claus!

By Hungerford



Edgewater Steel Company

PITTSBURGH, PA.


Serving America's Railroads with

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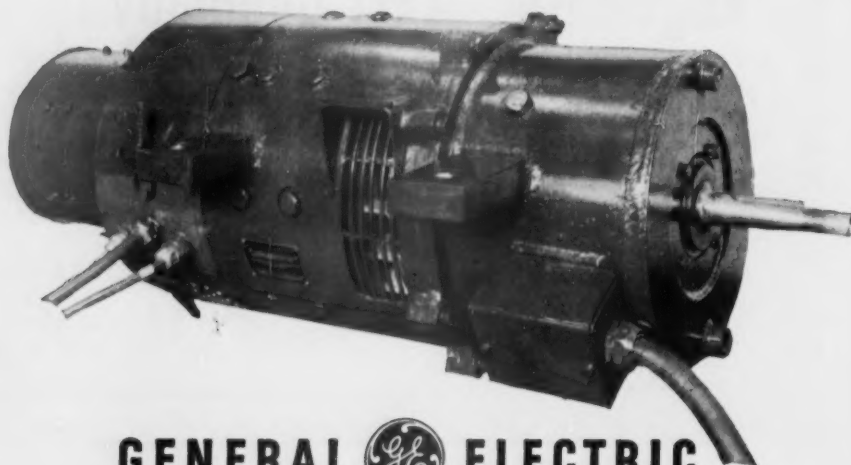
**ROLLED STEEL TIRES
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and DRAFT GEARS**



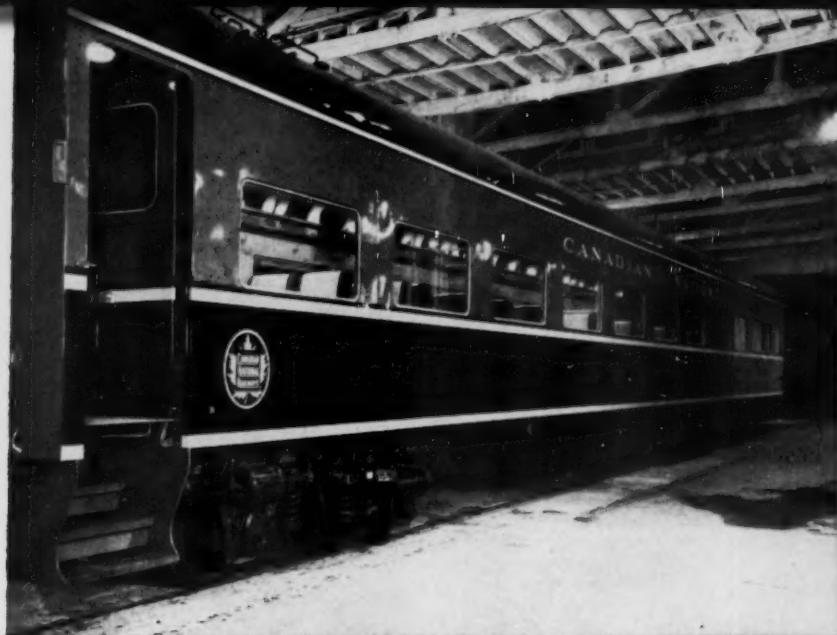
The idea for this cartoon, drawn by Mr. Hungerford, won a prize for Mr. M. J. ALGER, JR. in the Edgewater Cartoon Idea Contest, held during the R.S.M.A. Convention at Atlantic City in June 1953.



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INTERIOR FEATURES include modern lighting, air conditioning, and water coolers.



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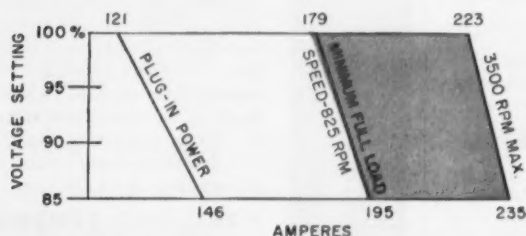
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EFFICIENT OUTPUT AT VARIOUS SPEEDS

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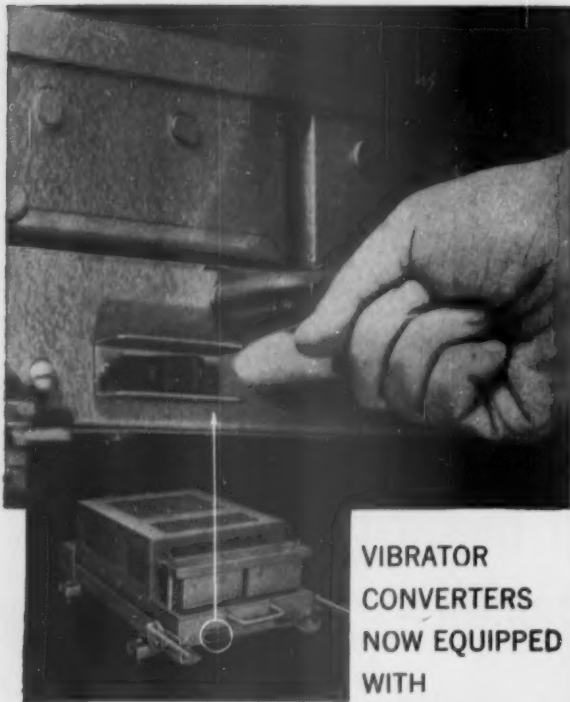


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Current Publications

(Continued from page 78)

eral elementary textbook for undergraduate students of business administration or graduate students who have not had a course in transportation and communication utilities.

The pattern followed is to outline briefly the principles of economic theory that are, in varying degrees, characteristic of these industries. Development of each form of transportation and communications is sketched; services rendered by each are discussed,

and the bases upon which their rates are made are described. Outlines of organization and management patterns are presented, and the relations of the utilities to each other and to the public they serve are stated. Finally, regulation of various instrumentalities of transportation and communications, as industries vested with a public interest, and administrative control by regulatory commissions and courts, are discussed through the media of statutory law and commission and court decisions.

The book is divided into seven parts: Economic significance of transportation; railroad transportation; water

transportation; highway and motor transportation; air transportation; miscellaneous transportation services and transportation policy; and communications. References for further study are given at the conclusion of each part. Materials in this volume have been used in mimeographed form by Dr. Wilson as a text for a course at the Wharton School of Finance and Commerce of the University of Pennsylvania.

DIRECTORY OF RAILWAY OFFICIALS & YEAR BOOK, 1954-1955. Compiled from official sources under direction of the editor of the Railway Gazette. 530 pages. Tothill Press Ltd., 33 Tothill st., Westminster, London, S.W.1, England. 40 shillings.

The layout of this edition follows that of its predecessors, but since more replies were received to inquiries, revision of individual entries is correspondingly more extensive. The principal change is the disappearance of the entry relating to the British Railway Executive in view of its absorption by the British Transport Commission on October 1; officers of the executive appear with their new designations in the commission or the regions. Much of the detail in the "Statistical and Other Information" section has been amended by the BTC.

The format remains unchanged—all entries being divided into two main divisions—British Commonwealth and foreign. Each of these sections is again subdivided geographically into continents and countries. For the first time since 1937 information is available on Korea National Railways.

AUTOMATIC MERCHANDISING, by Martin V. Marshall. 275 pages. Division of Research, Graduate School of Business Administration, Harvard University, Boston 63. \$3.50.

Since the end of World War II there has been a marked growth of interest in automatic vending. With development of new and improved machines, the extension of mechanical vending to such new fields as milk, hot coffee, fruit juice, sandwiches, toilet articles, and hosiery has substantially heightened interest in promotion of what seemed to be a new field of retail enterprise.

In his study Professor Marshall has tried to assess soberly and realistically the part automatic vending is playing in distribution of consumer goods, to appraise its principal areas of usefulness, and to analyze its limitations. From the broad marketing angle, the study shows some of the problems of new applications of vending, such as in-plant feeding and railroad passenger feeding (pages 142-152 contain a case study, with commentary on use of food vendors on a Pennsylvania passenger car), and use by department and specialty stores both within the store and in other locations. From the standpoint of business management, the



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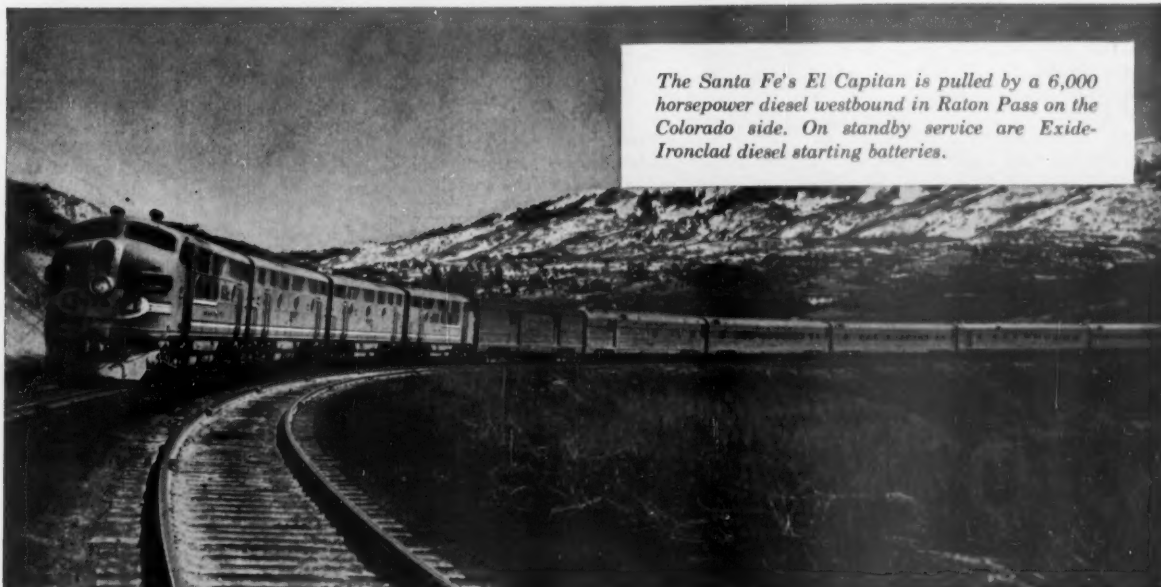
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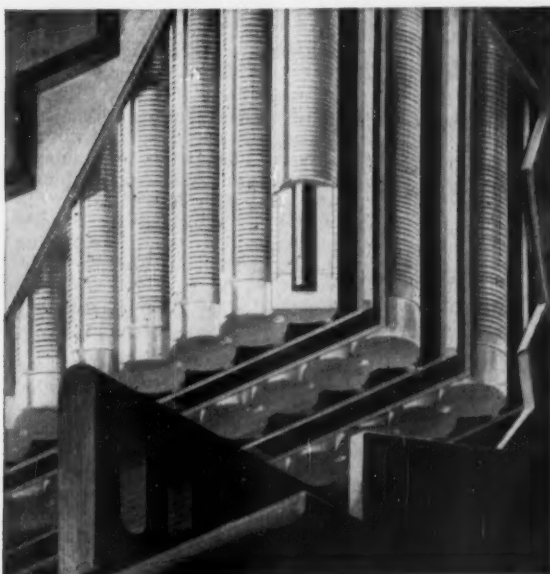
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book presents the nature of problems faced by established automatic vending concerns, which constitute an increasingly important segment of small business enterprise.

TRADE PUBLICATIONS

THE ALUMINUM DATA BOOK: ALUMINUM ALLOYS AND MILL PRODUCTS. 220 pages, tables, illustrations. Reynolds Metals Company, Louisville 1, Ky. Free if requested on company letterhead.

Aluminum is no longer a single metal but a large family of metals, involving many different alloys and tempers. To make an intelligent selection, the user must have definite informa-

tion as to alloys, tempers, sizes, shapes, physical characteristics, chemical compositions, and especially mechanical properties. This book attempts to supply that information as well as a brief exposition on fabricating methods and other useful information.

"GO BY TRAIN, THE PLEASANT WAY!" 15 pages, illustrations. Automatic Electric Sales Corporation, 1033 West Van Buren st., Chicago 7. Free.

Details of the recently developed intra-train telephone system, which provides automatic two-way car-to-car and car-to-engine communication, are given

in this booklet (Circular 1822). The contribution this system makes to passenger safety, comfort and convenience, according to the manufacturer, can give still greater validity to the slogan "Go by train—the pleasant way."

GOOD OPERATING PRACTICES. 12 pages, illustrations. Johns-Manville, 22 E. 40th st., New York 16. Free.

Contains 101 suggestions for maintaining plant buildings and equipment, including recommendations for getting the best service out of insulations, packings, refractory products, roofings and friction materials.

ANNUALS

AUTOMOBILE FACTS AND FIGURES, 34th Edition, 1954. 80 pages. Automobile Manufacturers Association, New Center bldg., Detroit 2. Free.

MOTOR TRUCK FACTS, 1954 Edition. 56 pages. Automobile Manufacturers Association, New Center bldg., Detroit 2. Free.

RESEARCH CENTER, ASSOCIATION OF AMERICAN RAILROADS. ANNUAL REPORT, 1954. 40 pages. Association of American Railroads, Technology Center, Chicago 16. Free.

FILM

HYSTER "BOX GRAB." 9 min, 16 mm, sound, black and white. Hyster Company, 2902 N.E. Clackamas st., Portland 8, Ore., or contact nearest Hyster dealer.

Describes unloading, stacking and loading-out of wooden lugs with the new Hyster "Box Grab." Advantages of the attachment in increasing storage capacity and reducing costs are illustrated. The attachment eliminates need for pallets by side-squeezing loads. The film is an actual job study.

PAMPHLETS

BULLETIN NO. 91. 175 pages, illustrations, drawings. Railway & Locomotive Historical Society, Baker Library, Harvard Business School, Boston. \$2 to members; \$3 to non-members.

The lead article is a lengthy discussion of English influence on American railroads, by Earl J. Heydinger. This is followed by the fourth and final installment of Fred Jukes' history of locomotive valve gears. Other articles are devoted to an account of some of the narrow-gauge railroads of the Pennsylvania oil region, the B&O's Magnolia Cut-off; the old class HA locomotives of the Central Pacific; early Mogul type locomotives; the transition from wood to coal burning locomotives on the Burlington; part



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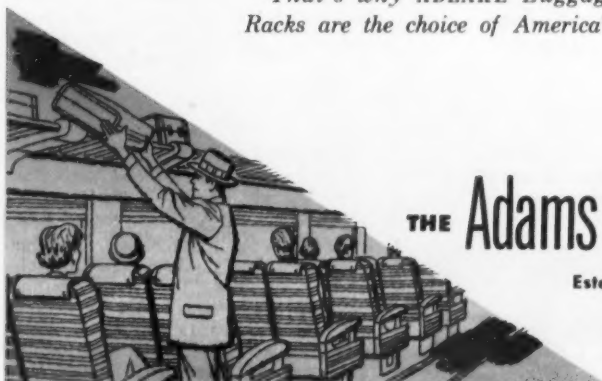
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III of Charles E. Fisher's "steam locomotives of the Pennsylvania railroad system"; and recollections of the PRR station at Lima, Ohio.

STOP UNFAIR TAXATION ON TRANSPORTATION OF PERSONS AND PROPERTY: GIVE TRANSPORTATION THE GREEN LIGHT TO MOVE AHEAD. 12 pages. Transportation Association of America, 130 North Wells st., Chicago 6. 10¢.

Explains why repeal of excise taxes on transportation of persons and property is vital to the public and to the well-being of an industry which is the life line of commerce and of national defense.

INSIDE RAILROADING. 25 pages, sketched illustrations. Association of American Railroads, Transportation bldg., Washington 6, D.C. Free.

Prepared to meet a need for factual and pictorial material relating to various aspects of railroading not familiar to the general public, this booklet goes behind the scenes for a look "inside" a steam locomotive cab, a diesel locomotive cab, a railway post office car, a dining car kitchen, a yard control tower, a CTC control room, a locomotive shop, a refrigerator car, a material yard, a rail detector car, a rotary plow, the railroad "navy," and a caboose.

MICROWAVE AND MOBILE COMMUNICATION TERMS. 39 pages. Radio Corporation of America, Engineering Products division, Dept. P-368, Camden, N.J. Free.

This is believed to be the first formal glossary of words and definitions peculiar to the field of microwave and mobile radio communications. Compiled in the industry interest, it utilizes sketches, diagrams, and charts, as well as text, to define esoteric terms which describe the theory, nature, and operation of radio communications equipment. The glossary ranges from "Absorption Coefficient" to "Zero-Bias," lists technical and non-technical organizations of interest to communications engineers, and supplies abbreviations of most widely used technical terms.

INVESTMENT FOR JOBS. 29 pages. Chamber of Commerce of the United States, Economic Research Department, Washington 6, D.C. Single copies, 50¢; quantity discounts.

Has the labor force been growing more rapidly than investment in job-making facilities? Is there a scarcity of investment funds? Are there any serious obstacles to creation of new jobs? This pamphlet is designed to help answer these and many other questions which people are asking.

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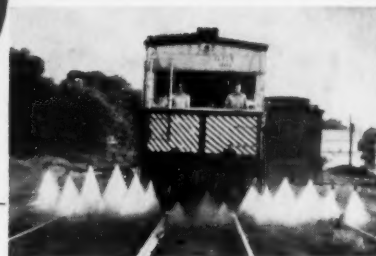
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